

Map Document: (S:\Projects\PASSAIC\MapDocuments\4622001-WRDAMXD\FSP2\_033106\WDXS\Introduction\site\location\_CSM.mxd)  
4/21/2008 - 3:37:36 PM



**Study Area Location Map**  
*Lower Passaic River Restoration Project*

Figure 1-1  
September 2008

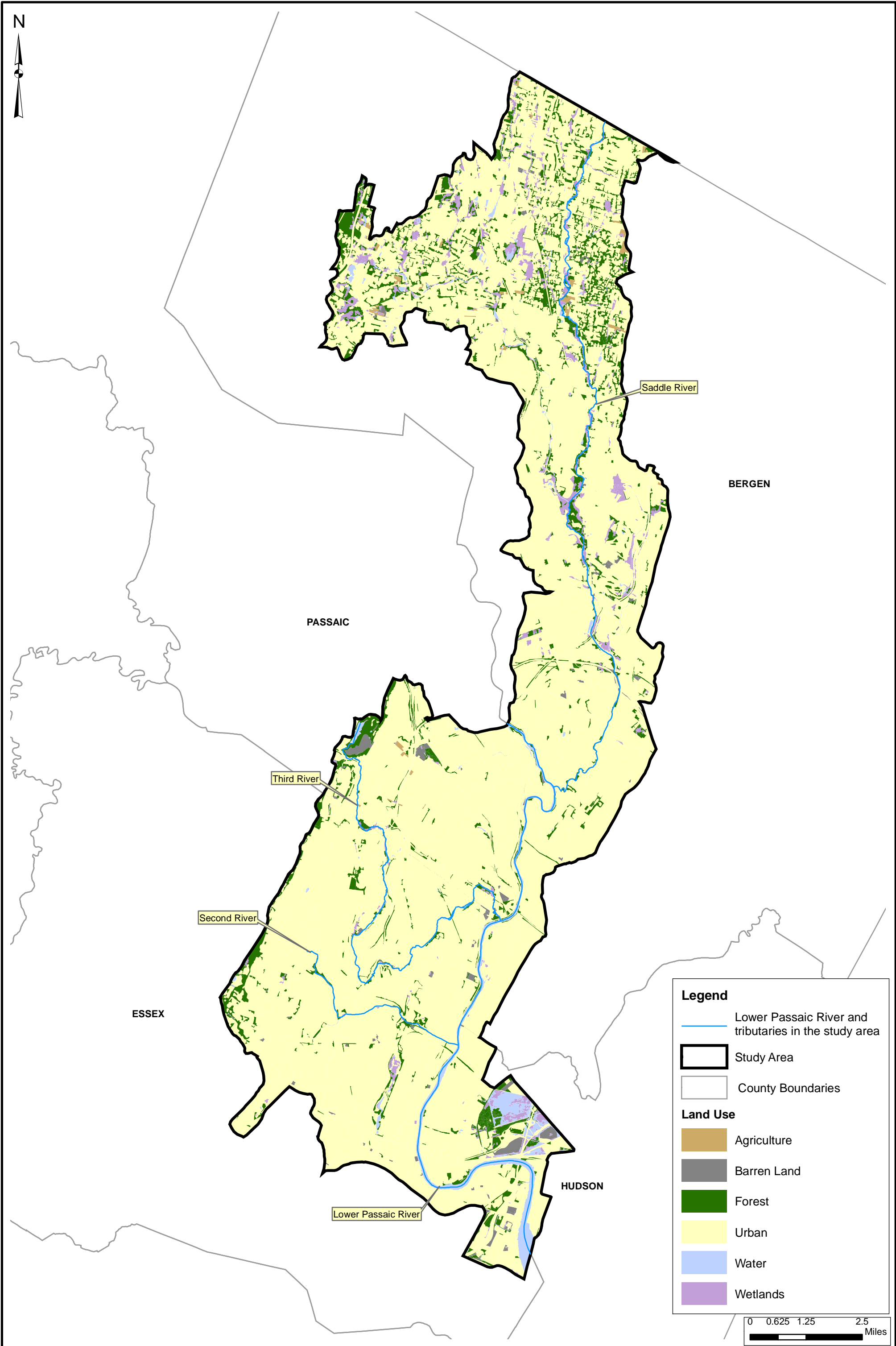


## Hudson-Raritan Estuary

*Lower Passaic River Restoration Project*

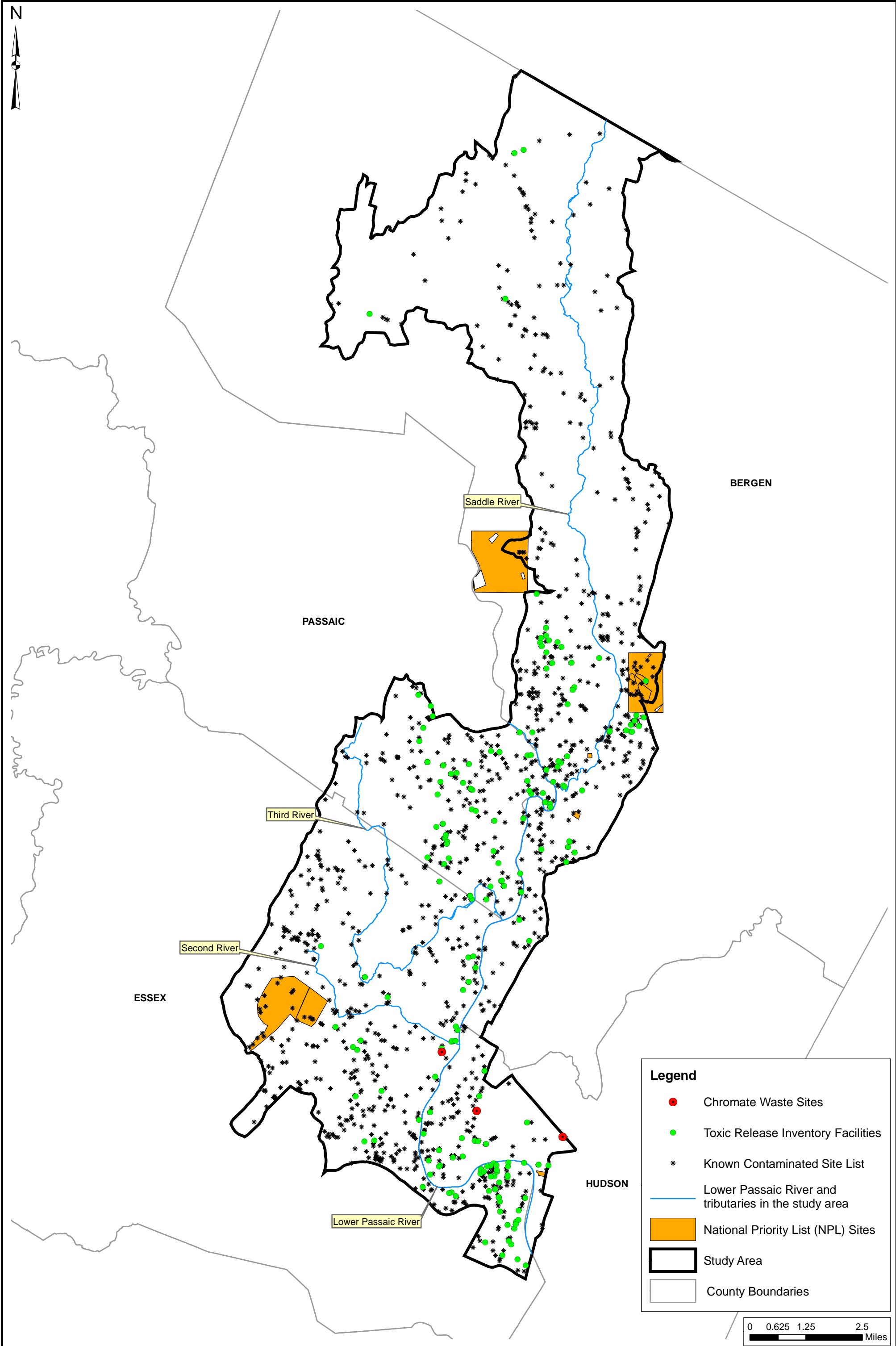
Figure 2-1

September 2008



**Existing Land Use Conditions**  
*Lower Passaic River Restoration Project*

Data Source:  
Land Use, NJDEP, 2002

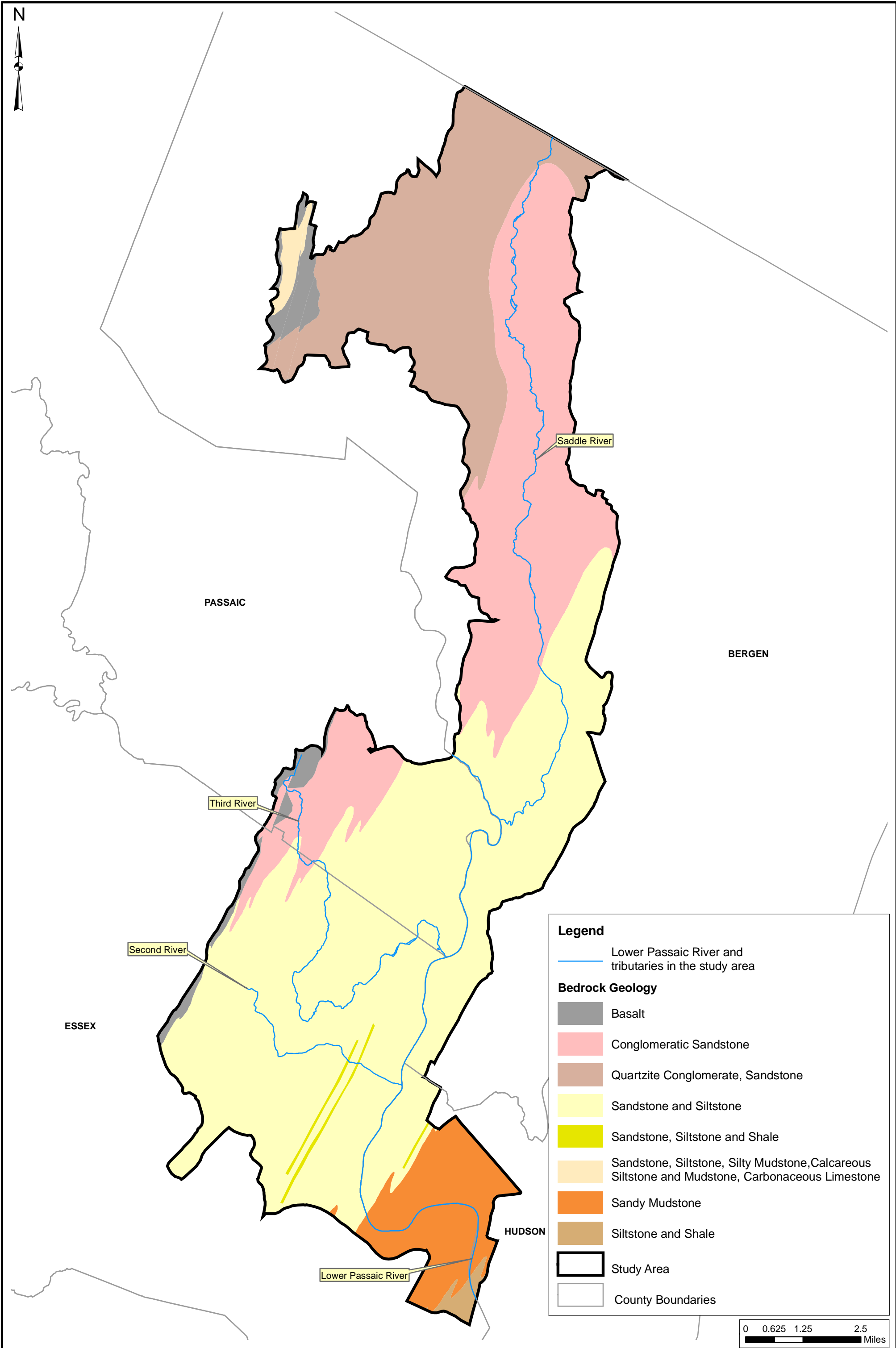


# Existing Hazardous Waste Sites

## Lower Passaic River Restoration Project

Data Source:  
 Toxic Release Inventory Facilities, USEPA, 2003  
 Chromate Waste Sites, NJDEP, 1995  
 Known Contaminated Site List, NJDEP, 2005  
 National Priority List Sites, USEPA, 2004

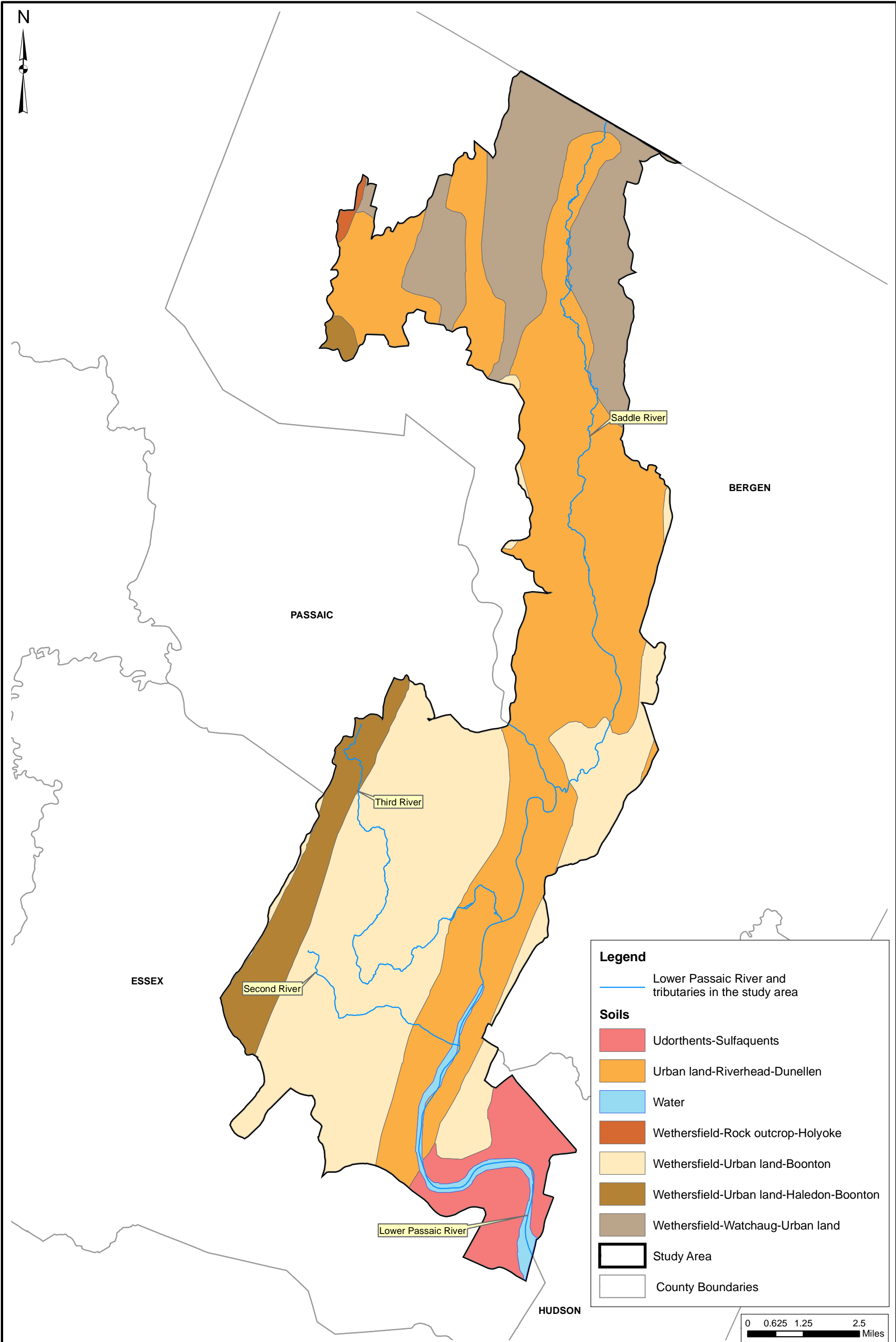




# Existing Bedrock Geology

Lower Passaic River Restoration Project

Data Sources:  
Bedrock Geology, NJGS and NJDEP, 2007



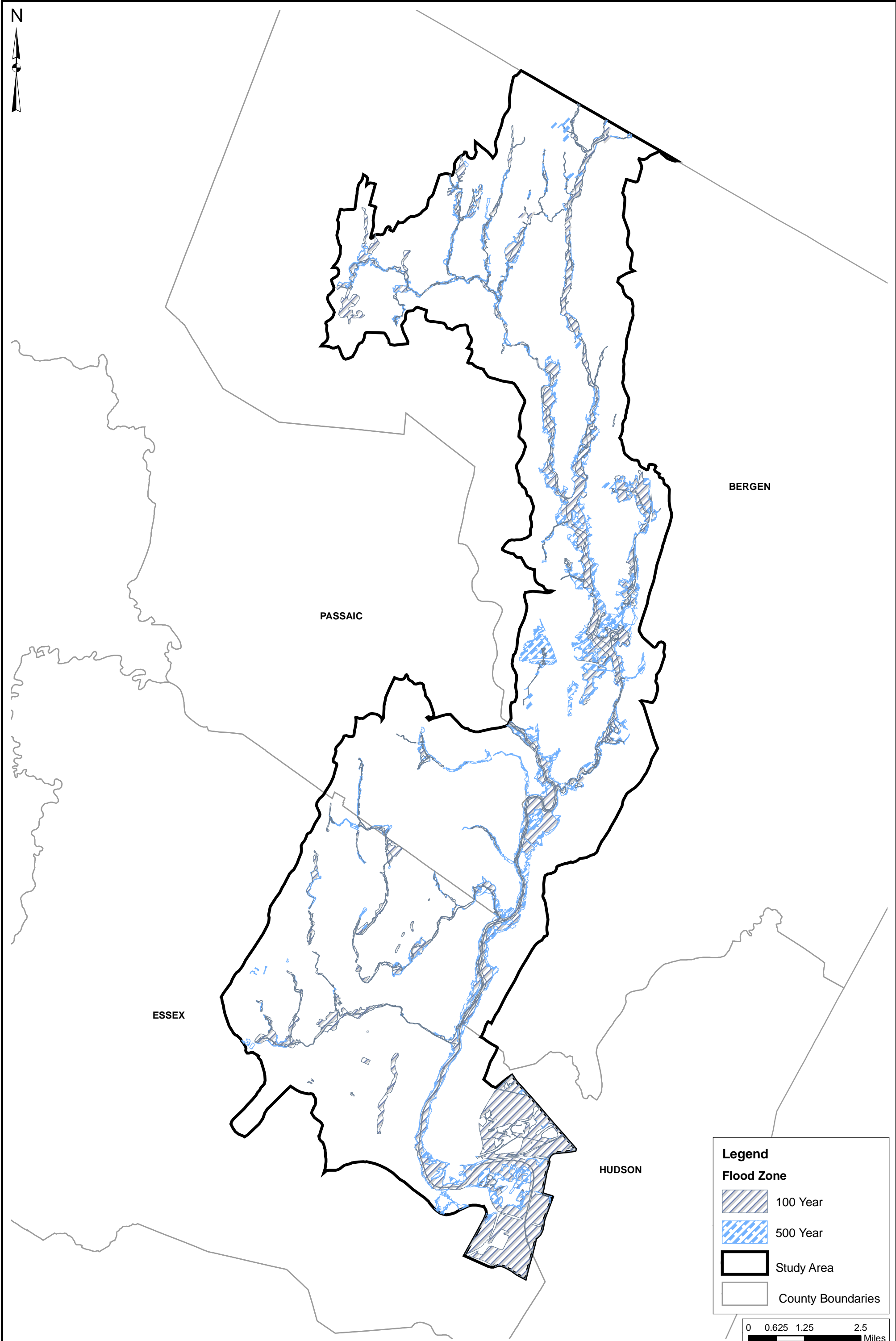
## Existing Soil Types

Lower Passaic River Restoration Project

Data Sources:  
Soils, NRCS and USDA, 2006

Figure 2-5

September 2008



# Existing 100-Year and 500-Year Flood Zones

*Lower Passaic River Restoration Project*

Data Source:  
FEMA Flood Zones, FEMA DFIRM Database,  
2005-2007

**Figure 2-6**

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2004-2005 Field Reconnaissance at Kearny Point  
(looking south/southwest)



2004-2005 Field Reconnaissance at RM1.9  
(looking southwest at Pulaski Skyway)



2004-2005 Field Reconnaissance at RM2.3



November 2006 Site Visit at RM2.3  
(looking east at Point No Point Bridge)



Photolog of Shoreline Conditions and Surrounding Habitat

*Lower Passaic River Restoration Project*

Figure 2-7a

September 2008





November 2006 Site Visit at RM2.4 (looking north at NJ Turnpike Bridge)



November 2006 Site Visit at RM2.6 (looking south)



November 2006 Site Visit at RM3.1 (looking south)



November 2006 Site Visit at RM3.2 (looking south)



Photolog of Shoreline Conditions and Surrounding Habitat

*Lower Passaic River Restoration Project*

Figure 2-7b

September 2008



November 2006 Site Visit at RM3.4  
(looking southwest)



November 2006 Site Visit at RM3.5  
(looking east)



November 2006 Site Visit at RM3.5  
(looking southwest)



November 2006 Site Visit at RM4.5 (looking  
northeast at Jackson Street Bridge)



Photolog of Shoreline Conditions and Surrounding Habitat

*Lower Passaic River Restoration Project*

Figure 2-7c

September 2008



November 2006 Site Visit at RM5  
(looking southwest)



November 2006 Site Visit at RM5.4  
(looking north at Bridge Street Bridge)



November 2006 Site Visit at RM6  
(looking east)



2004-2005 Field Reconnaissance at  
RM6.2 (looking east)



Photolog of Shoreline Conditions and Surrounding Habitat

*Lower Passaic River Restoration Project*

Figure 2-7d

September 2008





2004-2005 Field Reconnaissance at  
RM6.9 (looking east)



2004-2005 Field Reconnaissance at  
RM7.2 (looking east)



2004-2005 Field Reconnaissance at  
RM7.2 (looking east)



2004-2005 Field Reconnaissance at  
RM7.4 (looking east)



Photolog of Shoreline Conditions and Surrounding Habitat

*Lower Passaic River Restoration Project*

Figure 2-7e

September 2008





2004-2005 Field Reconnaissance at RM7.8  
(looking east at Belleville Turnpike Bridge)



2004-2005 Field Reconnaissance at  
RM8.3 (looking east)



2004-2005 Field Reconnaissance at  
RM9.4 (looking east)



2004-2005 Field Reconnaissance at  
RM9.4 (looking east)



Photolog of Shoreline Conditions and Surrounding Habitat

*Lower Passaic River Restoration Project*

Figure 2-7f

September 2008



2004-2005 Field Reconnaissance at  
RM9.6 (looking east)



2004-2005 Field Reconnaissance at  
RM9.8 (looking east)



2004-2005 Field Reconnaissance at  
RM10.1 (looking east)



November 2006 Site Visit at RM10.4  
(looking north at De Jesse Street Bridge)



Photolog of Shoreline Conditions and Surrounding Habitat

*Lower Passaic River Restoration Project*

Figure 2-7g

September 2008





2004-2005 Field Reconnaissance at  
RM10.7 (looking east)



2004-2005 Field Reconnaissance at  
RM11.5 (looking east)



2004-2005 Field Reconnaissance at  
RM11.7 (looking east)



2004-2005 Field Reconnaissance at  
RM12.8 (looking west)



Photolog of Shoreline Conditions and Surrounding Habitat

*Lower Passaic River Restoration Project*

Figure 2-7h

September 2008



2004-2005 Field Reconnaissance at  
RM12.9 (looking east)



2004-2005 Field Reconnaissance at  
RM12.9 (looking east)



2004-2005 Field Reconnaissance at  
RM14.2 (looking east)



2004-2005 Field Reconnaissance at  
RM14.3



Photolog of Shoreline Conditions and Surrounding Habitat

*Lower Passaic River Restoration Project*

Figure 2-7i

September 2008





November 2006 Site Visit at RM15.8  
(looking south at Passaic Street Bridge)



2004-2005 Field Reconnaissance at RM15.9  
(looking north at Monroe Street Bridge)



November 2006 Site Visit at RM15.9  
(looking north at Monroe Street Bridge)



2004-2005 Field Reconnaissance at  
RM15.9 (looking northeast)



Photolog of Shoreline Conditions and Surrounding Habitat

*Lower Passaic River Restoration Project*

Figure 2-7j

September 2008





November 2006 Site Visit at RM15.9  
(looking northeast)



2004-2005 Field Reconnaissance at RM16



2004-2005 Field Reconnaissance at  
Island at RM16.5 (looking west)



2004-2005 Field Reconnaissance at  
RM16.5 (looking east from road)



Photolog of Shoreline Conditions and Surrounding Habitat

*Lower Passaic River Restoration Project*

Figure 2-7k

September 2008





2004-2005 Field Reconnaissance at  
RM17.2 (looking east)



2004-2005 Field Reconnaissance at RM17.2



2004-2005 Field Reconnaissance at  
RM17.4 (near Dundee Dam)



2004-2005 Field Reconnaissance at RM  
17.4 (near Dundee Dam)

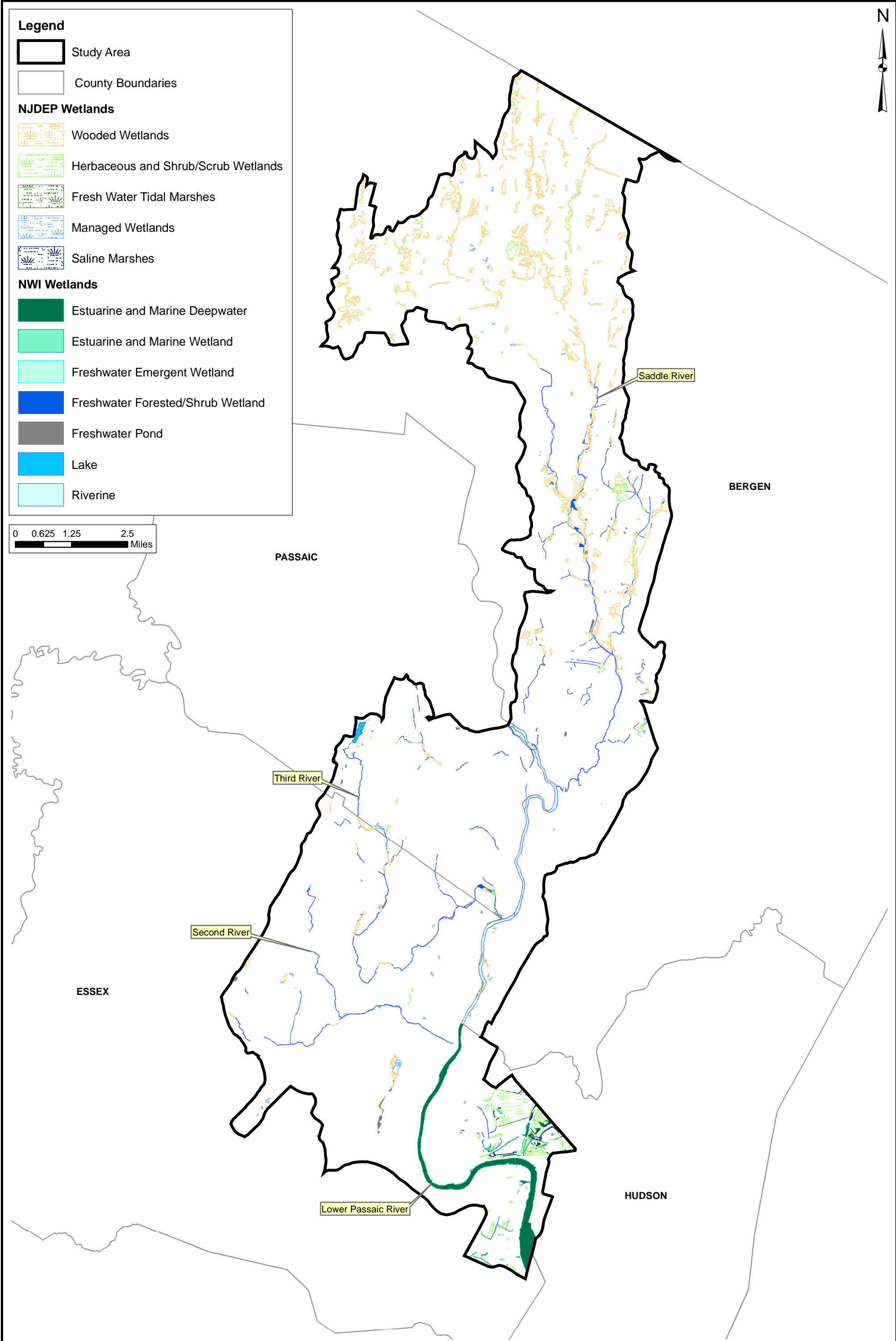


Photolog of Shoreline Conditions and Surrounding Habitat

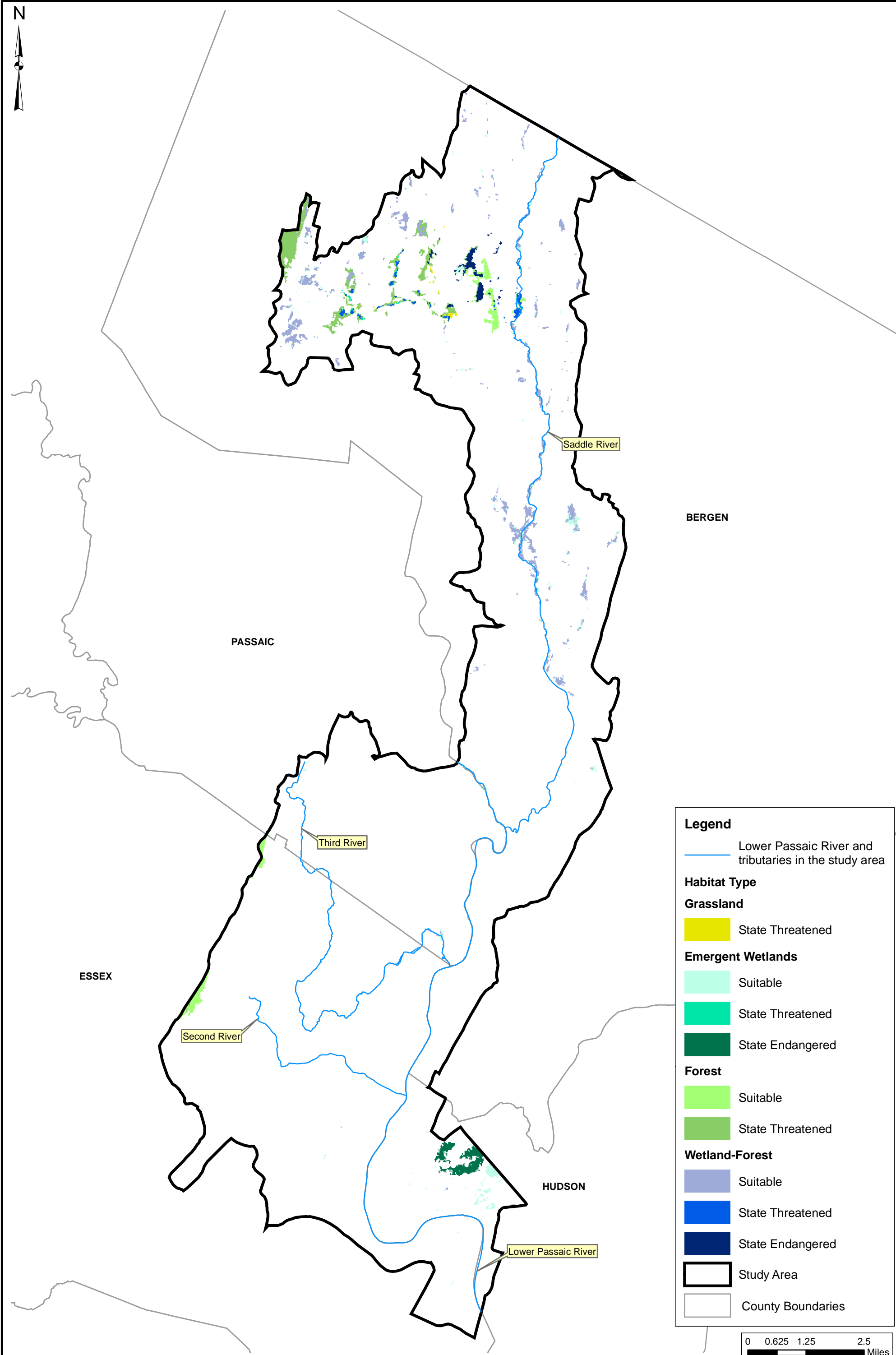
*Lower Passaic River Restoration Project*

Figure 2-7I

September 2008





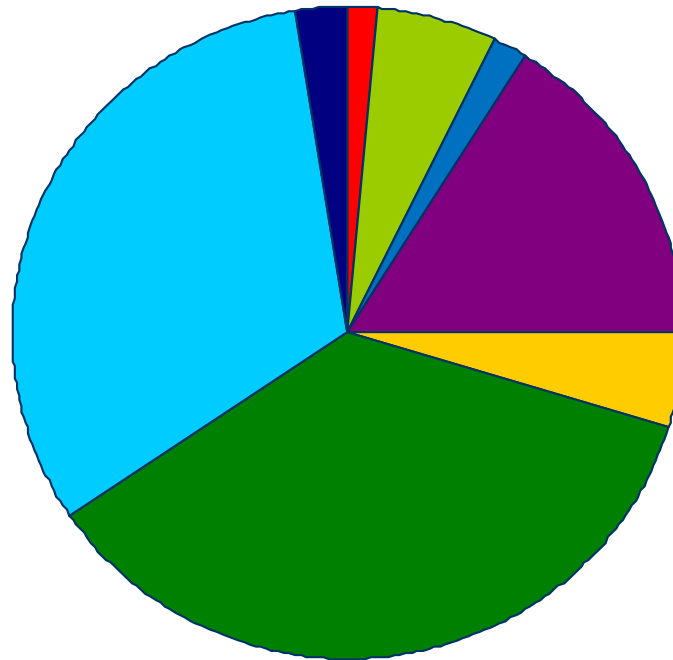


**Existing Habitat for Endangered  
and Threatened Species**  
*Lower Passaic River Restoration Project*

Data Sources:  
Habitat, NJDEP Division of Fish  
and Wildlife, 2001

**Figure 2-9**  
September 2008

## 1999 Field Data



### Legend

- Atlantic Menhaden
- Gizzard Shad
- Striped Bass
- White Perch
- American Eel
- Blue Crab
- Mummichog (killifish)
- Other Species

### Notes

Demersal and Pelagic Fish from RM1 to RM7. Excludes incidental catch for each gear types (e.g., silversides in gill nets).

Data Source: TSI (2002) as cited in Earth Tech, Inc. and Malcolm Pirnie, Inc., 2004.



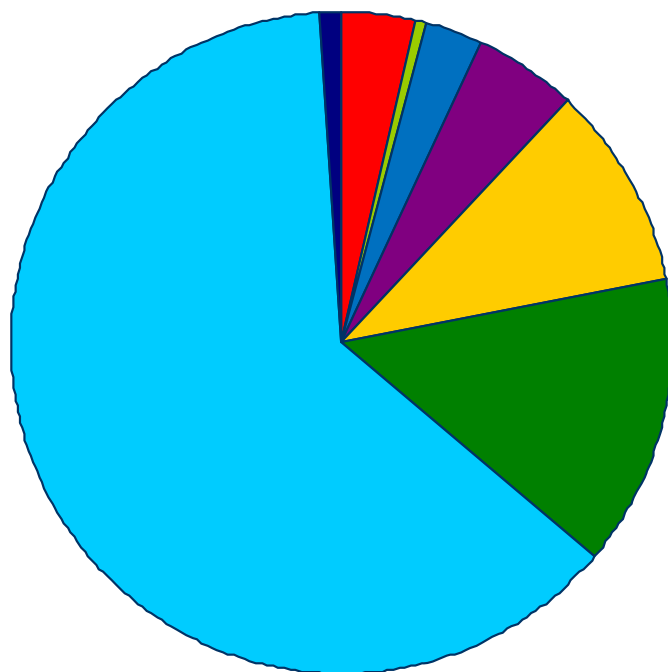
Existing Fish Communities in the Lower Passaic River

*Lower Passaic River Restoration Project*

Figure 2-10a

September 2008

## 2000 Field Data



### Legend

- Atlantic Menhaden
- Gizzard Shad
- Striped Bass
- White Perch
- Inland Silverside
- Blue Crab
- Mummichog (killifish)
- Other

### Notes

Demersal and Pelagic Fish from RM1 to RM7. Excludes incidental catch for each gear types (e.g., silversides in gill nets).

Data Source: TSI (2002) as cited in Earth Tech, Inc. and Malcolm Pirnie, Inc., 2004.



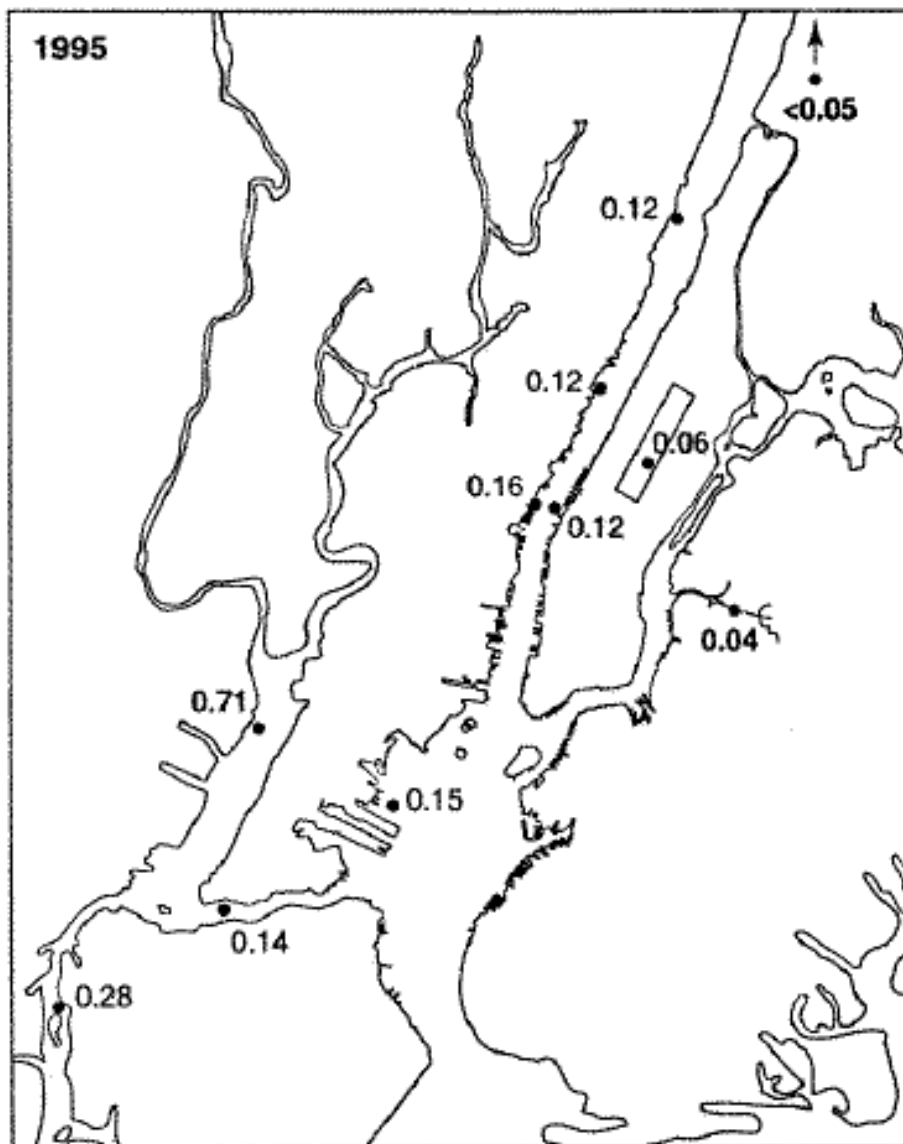
Existing Fish Communities in the Lower Passaic River

*Lower Passaic River Restoration Project*

Figure 2-10b

September 2008





## Legend

- 2,3,7,8-TCDD/Total TCDD Ratio

## Notes

Chaky DA, 2003.  
 "Polychlorinated Biphenyls, Polychlorinated Dibenzo-p-Dioxins and Furans in the New York Metropolitan Area; Interpreting Atmospheric Deposition and Sediment Chronologies." PhD Thesis, Rensselaer Polytechnic Institute, Troy, NY. August 2003.

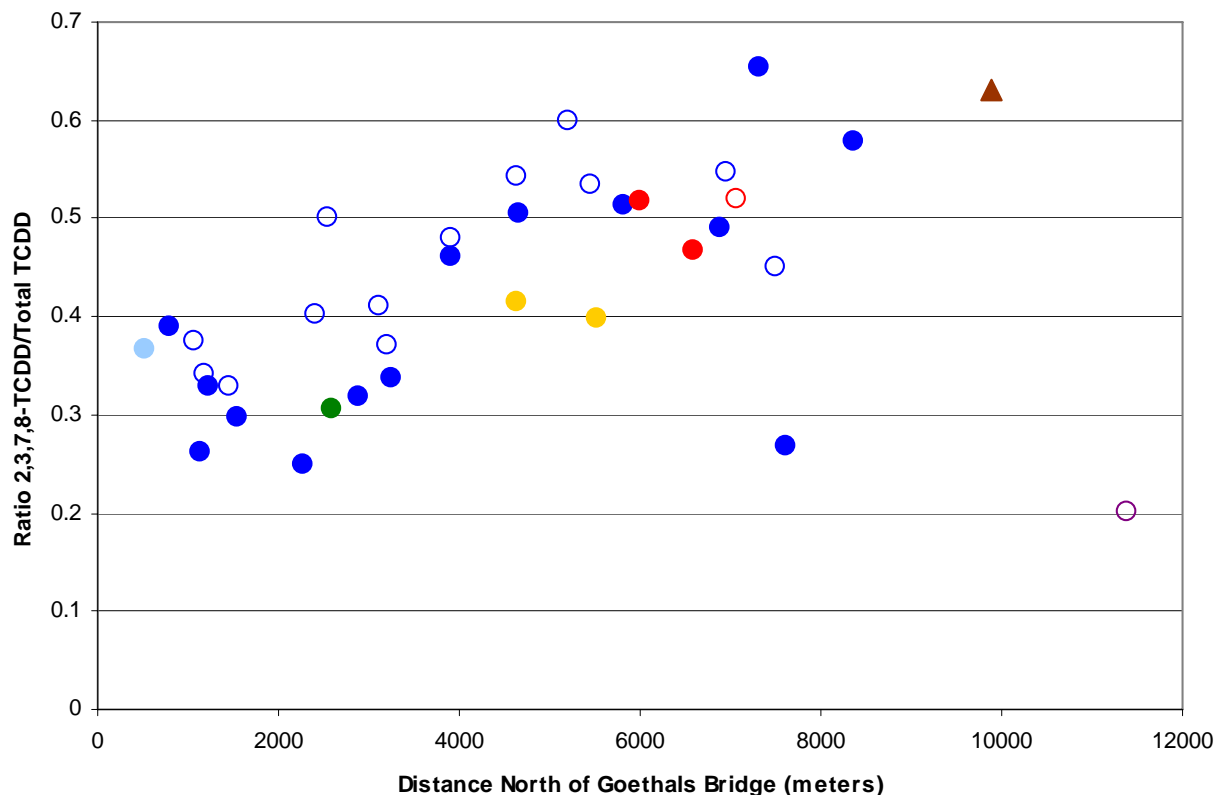


Reprint from Chaky (2003): Ratio of 2,3,7,8-TCDD/Total TCDD in the Hudson-Raritan Estuary in 1995

*Lower Passaic River Restoration Project*

Figure 2-11

September 2008



### Colors Legend

- Newark Bay
- Confluence of unnamed creek with Hackensack River
- Port Newark Channel
- Port Elizabeth Channel
- South Elizabeth Channel
- Arthur Kill
- ▲ Lower Passaic River (2005)

### Symbols Legend

- Coring Locations in Navigation Channels
- Coring Locations outside Navigation Channels

### Notes:

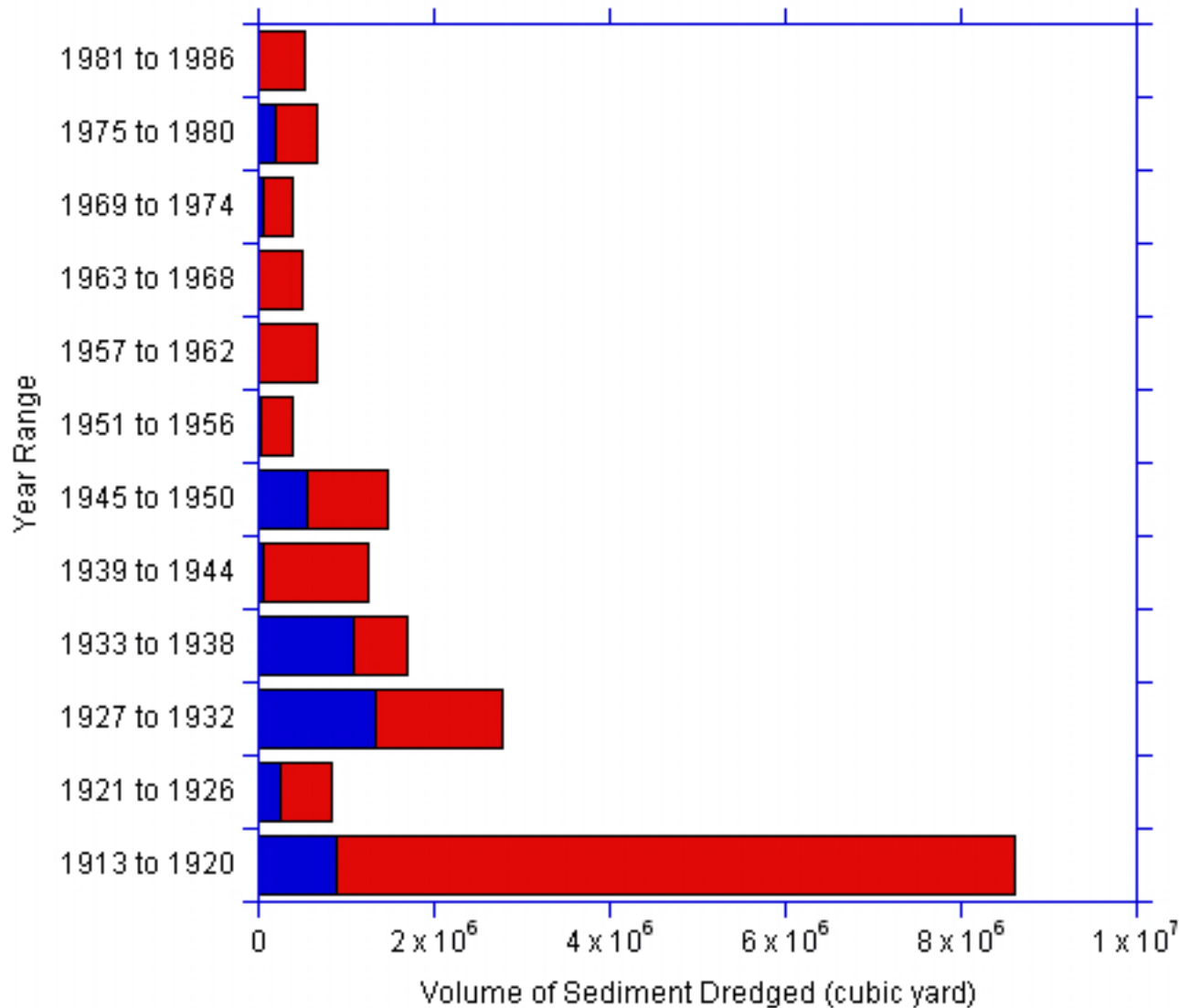
1. 2,3,7,8-TCDD and Total TCDD surface concentrations represent the top 6 inches of the core.
2. When duplicate 2,3,7,8-TCDD or Total TCDD values are provided by the laboratory, the average ratio is plotted.
3. No nondetected 2,3,7,8-TCDD or Total TCDD values were reported for the surface sediment.
4. Concentration ratios are plotted only for depositional environments, indicated by Beryllium-7 detections more than 0.5 pCi/g in the top inch of the core.
5. Data Source: Malcolm Pirnie, Inc. High Resolution Sediment Core in the Lower Passaic River (RM1.4). USEPA 2005-2006 Sampling Program.
6. Data Source: Newark Bay Phase 2 Remedial Investigation Work Plan (October 2006). Samples collected in October to December 2005.



Ratio of 2,3,7,8-TCDD/Total TCDD in Newark Bay  
Surface Sediments  
*Lower Passaic River Restoration Project*

Figure 2-12

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## Legend

- Below RM2
- Above RM2

## Notes

Data Sources: USACE, 1880, USACE, 1884, USACE, 1900, USACE, 1907, USACE, 1913, USACE, 1915, USACE, 1916, and USACE, 1917 as cited in Iannuzzi, *et al.*, 2002 (refer to Section 10 "References" for complete citation).



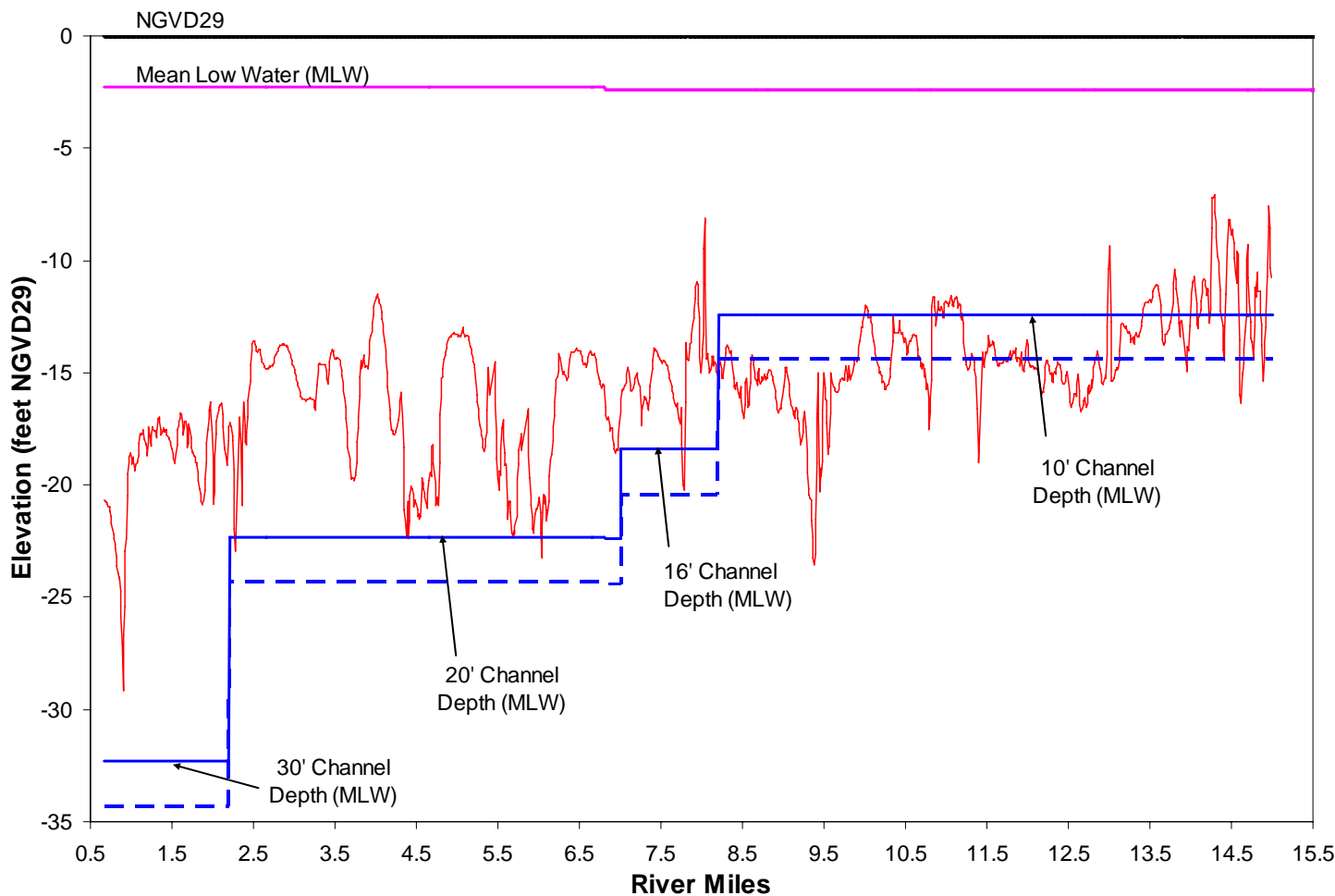
The History of Dredging in the Lower Passaic River

Lower Passaic River Restoration Project

Figure 2-13

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## Legend

- Navigational Channel Centerline Bathymetry
- Navigational Channel Depth
- - - Navigational Channel Depth + 2 feet

## Notes

Channel depths were dredged relative to mean low water (MLW). The difference between NGVD29 and MLW is approximately 2.3 feet.

Solid blue line represents federally mandated channel depth.

Dashed blue line represents the channel depth +2 feet which would have been the dredged depth in order to maintain the federally specified channel depth.

Elevation data estimated from 2004 bathymetric data surveyed by Rogers Survey, Inc. for USACE.

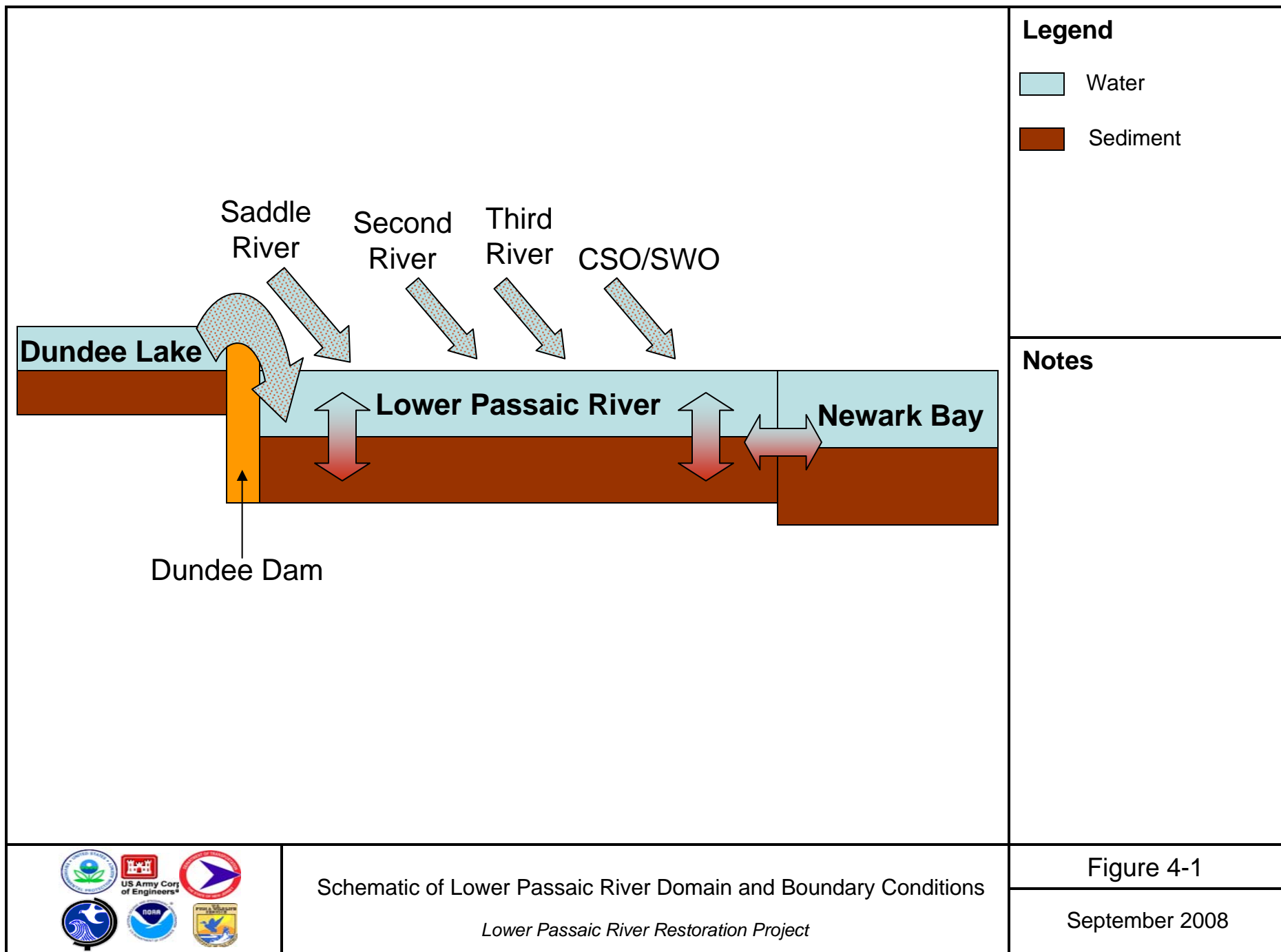


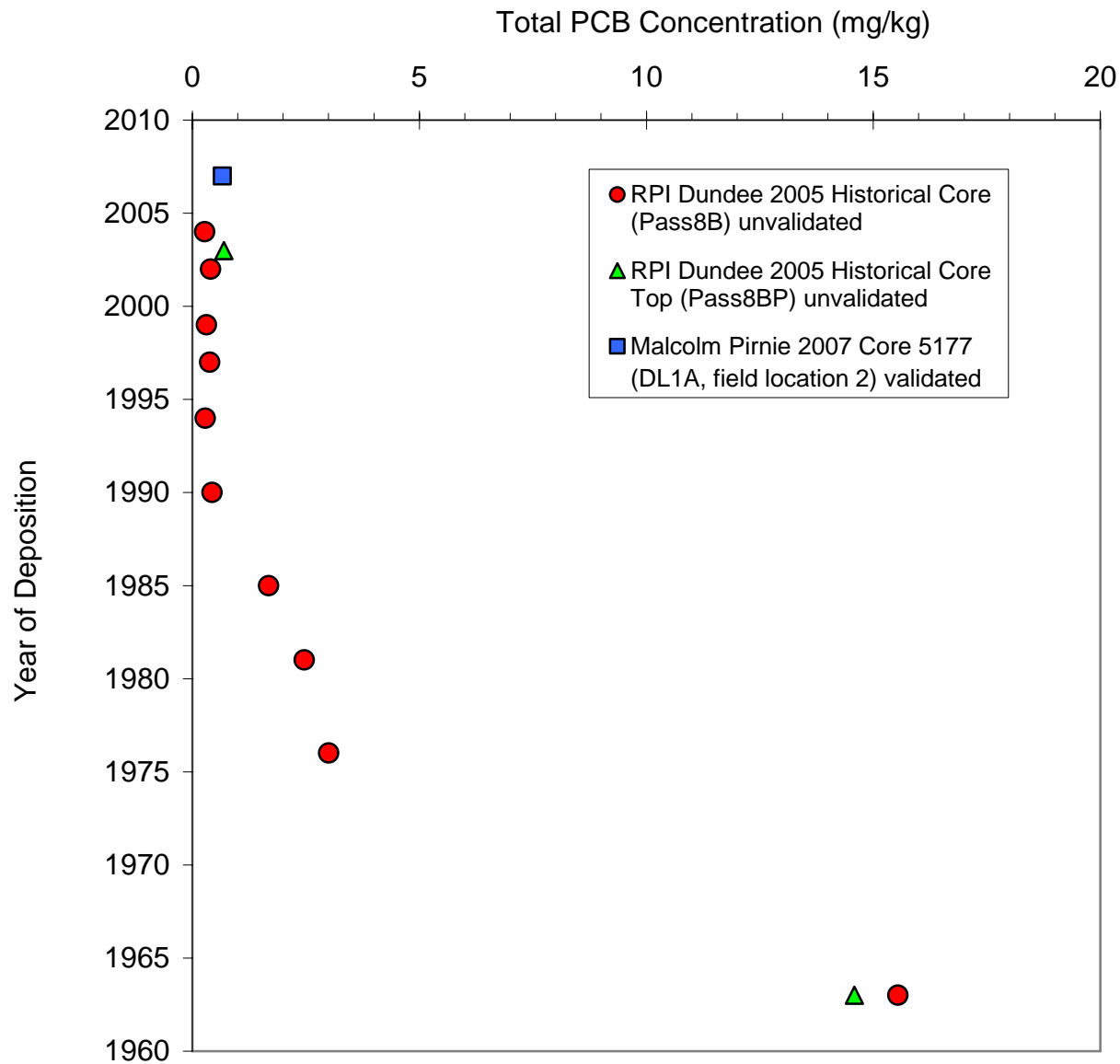
## River Bottom Elevation and Authorized Channel Depths

*Lower Passaic River Restoration Project*

Figure 2-14

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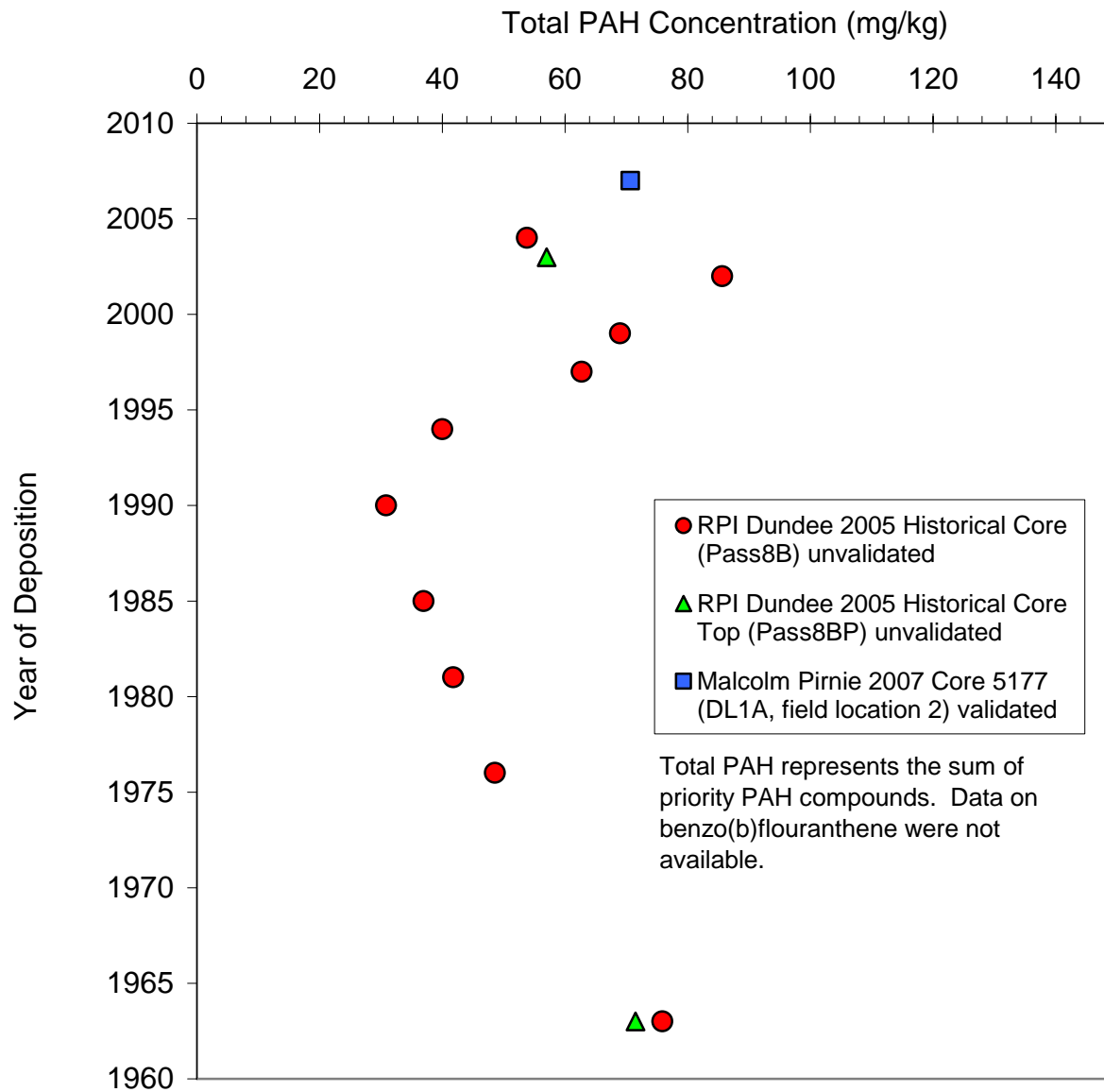
### Total PCB Downcore Profile

Lower Passaic River Restoration Project

Figure 5-1

September 2008



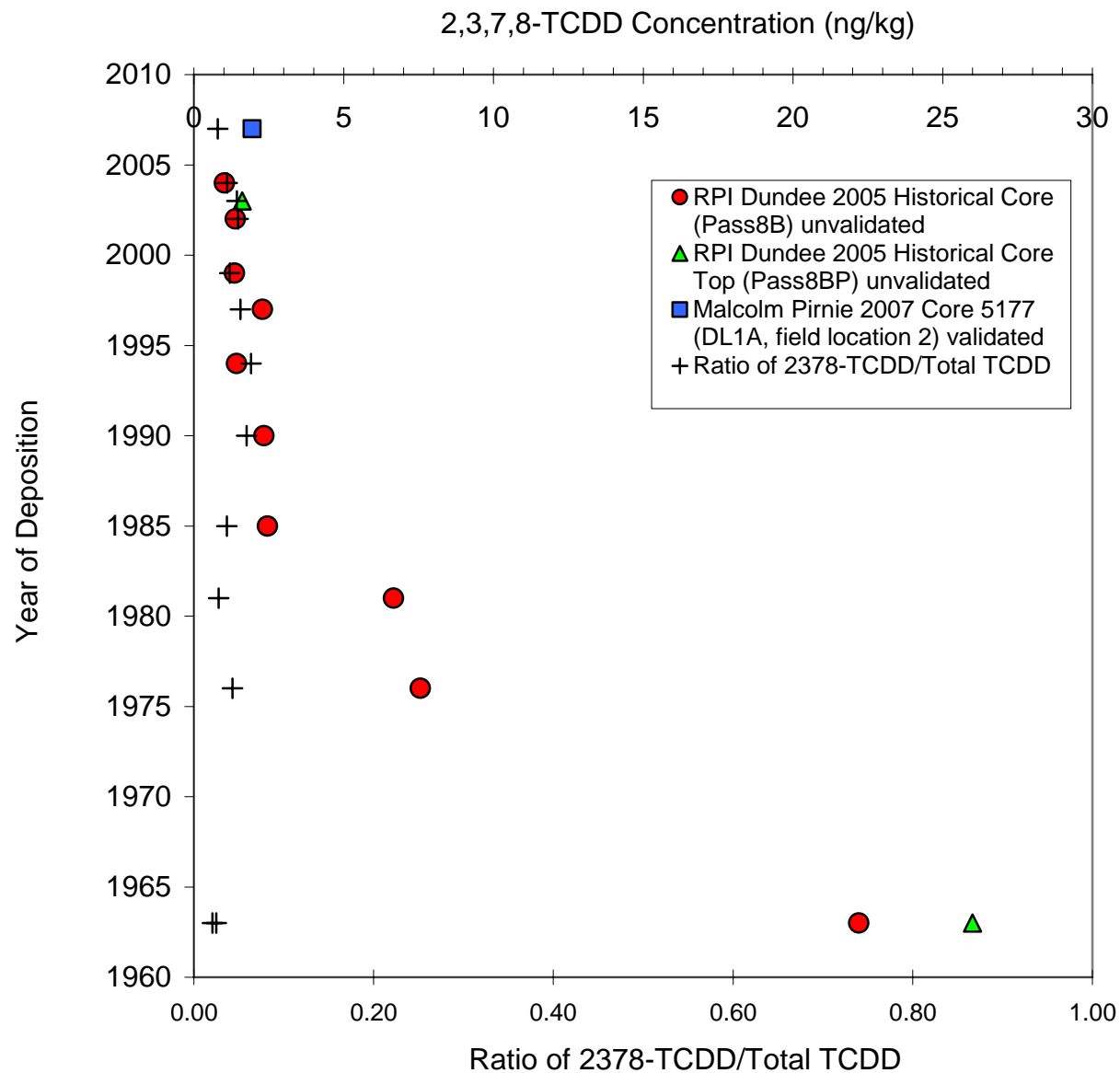


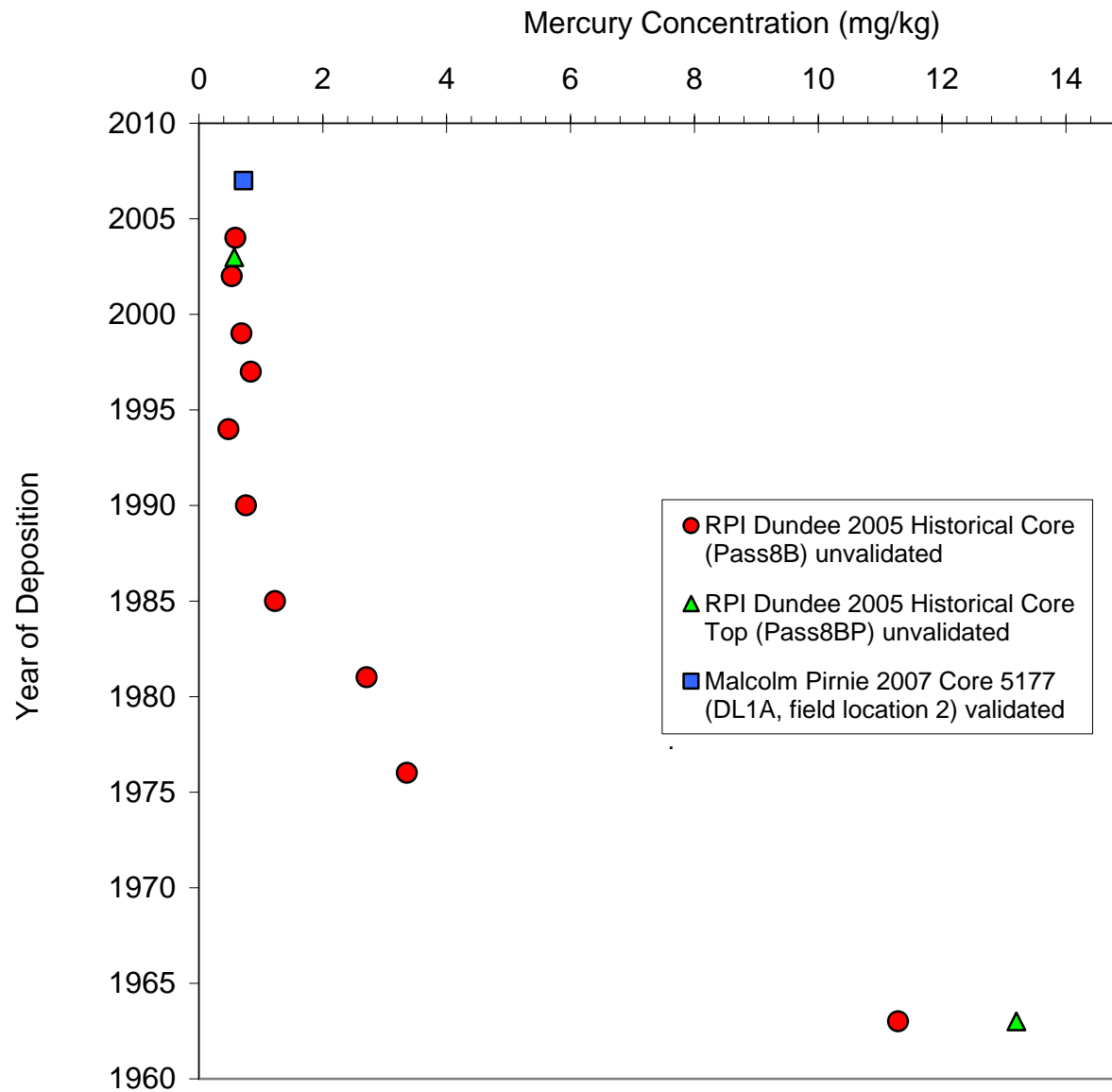
### Total PAH Downcore Profile

Lower Passaic River Restoration Project

Figure 5-2

September 2008





# Mercury Downcore Profile

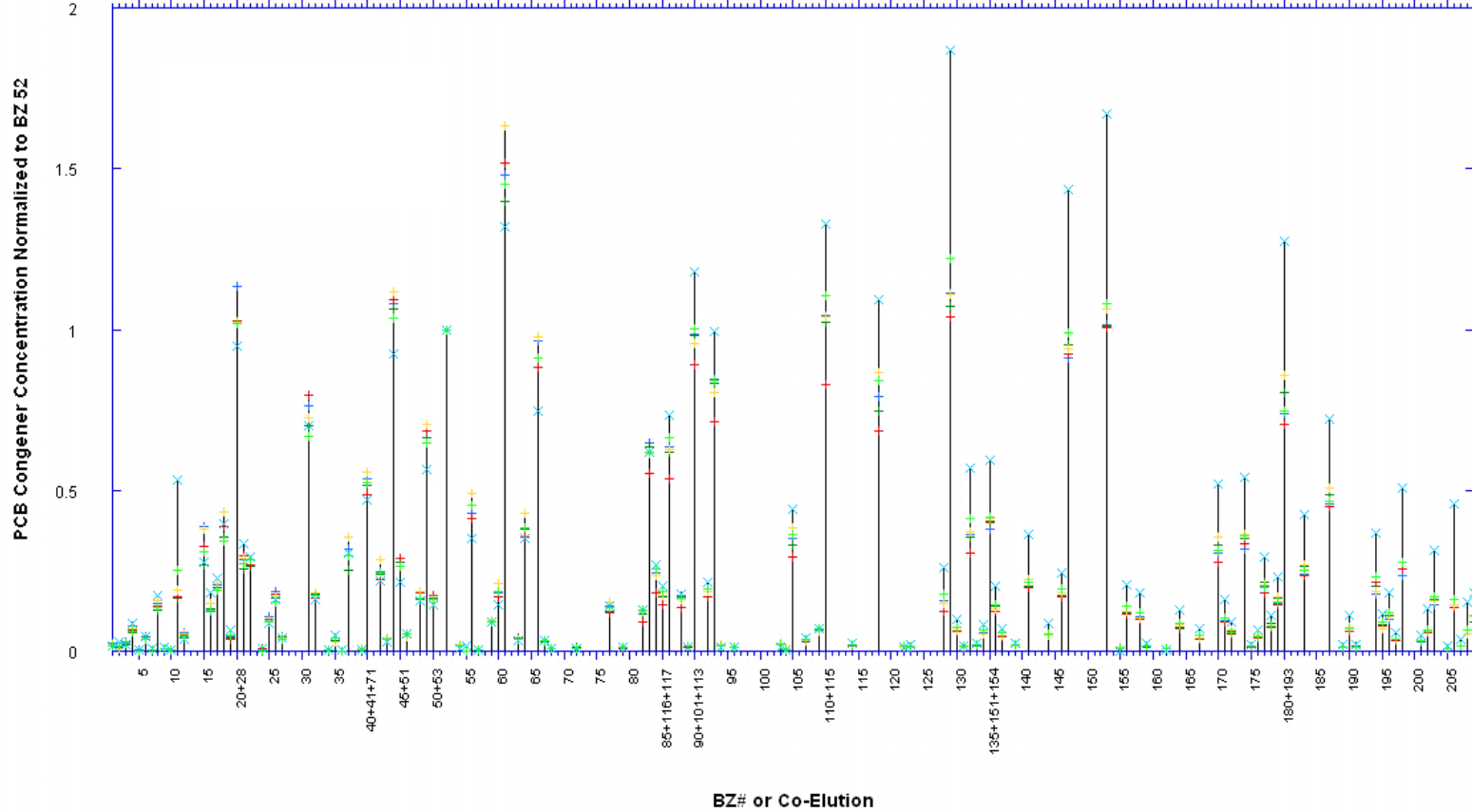
Lower Passaic River Restoration Project

Figure 5-4

September 2008



Passaic River High Resolution Cores and  
Dundee Dam Core 2 PCB Congener Normalized to BZ 52



## Legend

- + RM(1.4) Normalized PCB Congener
- + RM(2.2) Normalized PCB Congener
- + RM(7.8) Normalized PCB Congener
- + RM(11) Normalized PCB Congener
- + RM(12.6) Normalized PCB Congener
- x Dundee Lake Core 2 (0-2 cm) Normalized PCB Congener

## Notes

Normalized PCB Congener ratios <0.01 are not plotted.



Normalized PCB Congener Pattern for Dundee Dam and Lower Passaic River

Lower Passaic River Restoration Project

Figure 5-5

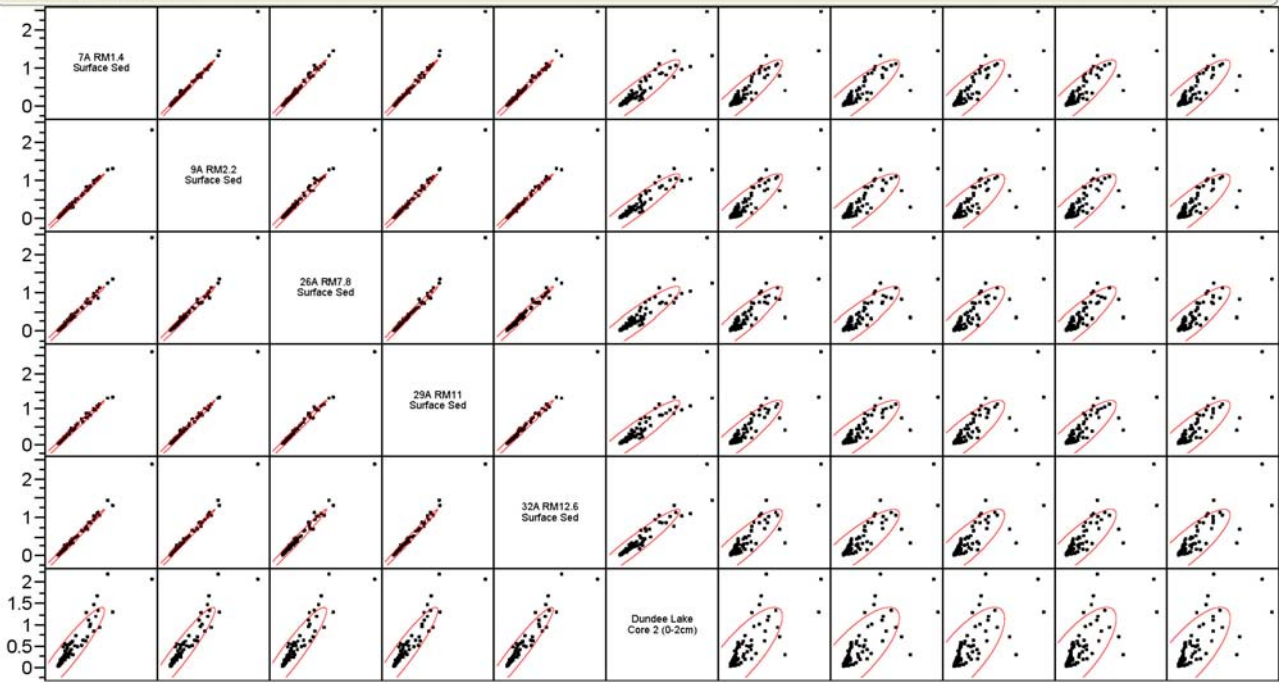
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Multivariate  
Correlations

	7A RM1.4 Surface Sediment	9A RM2.2 Surface Sediment	26A RM7.8 Surface Sediment	29A RM11 Surface Sediment	32A RM12.6 Surface Sediment	Dundee Lake Core 2 (0-2cm)	NB01SED03 1 (RM 3.03)	NB01SED03 0 (RM 3.4)	NB01SED02 4 (RM 4.01)	NB01SED02 1 (RM 4.08)	NB01SED01 7 (RM 4.59)
7A RM1.4 Surface Sediment	1.0000	0.9979	0.9964	0.9973	0.9967	0.9348	0.9167	0.8917	0.8755	0.8862	0.8802
9A RM2.2 Surface Sediment	0.9979	1.0000	0.9951	0.9968	0.9977	0.9467	0.8973	0.8710	0.8524	0.8629	0.8575
26A RM7.8 Surface Sediment	0.9964	0.9951	1.0000	0.9962	0.9922	0.9291	0.9119	0.8873	0.8718	0.8845	0.8774
29A RM11 Surface Sediment	0.9973	0.9968	0.9962	1.0000	0.9954	0.9346	0.9046	0.8787	0.8614	0.8731	0.8650
32A RM12.6 Surface Sediment	0.9967	0.9977	0.9922	0.9954	1.0000	0.9555	0.8931	0.8658	0.8467	0.8573	0.8525
Dundee Lake Core 2 (0-2cm)	0.9348	0.9467	0.9291	0.9346	0.9555	1.0000	0.8000	0.7711	0.7475	0.7531	0.7582
NB01SED031 (RM 3.03)	0.9167	0.8973	0.9119	0.9046	0.8931	0.8000	1.0000	0.9965	0.9943	0.9952	0.9938
NB01SED030 (RM 3.4)	0.8917	0.8710	0.8873	0.8787	0.8658	0.7711	0.9965	1.0000	0.9972	0.9961	0.9965
NB01SED024 (RM 4.01)	0.8755	0.8524	0.8718	0.8614	0.8467	0.7475	0.9943	0.9972	1.0000	0.9978	0.9980
NB01SED021 (RM 4.08)	0.8862	0.8629	0.8845	0.8731	0.8573	0.7531	0.9952	0.9961	0.9978	1.0000	0.9976
NB01SED017 (RM 4.59)	0.8802	0.8575	0.8774	0.8650	0.8525	0.7582	0.9938	0.9965	0.9980	0.9976	1.0000

105 rows not used due to missing or excluded values or frequency or weight  
variables missing, negative or less than one.

Scatterplot Matrix



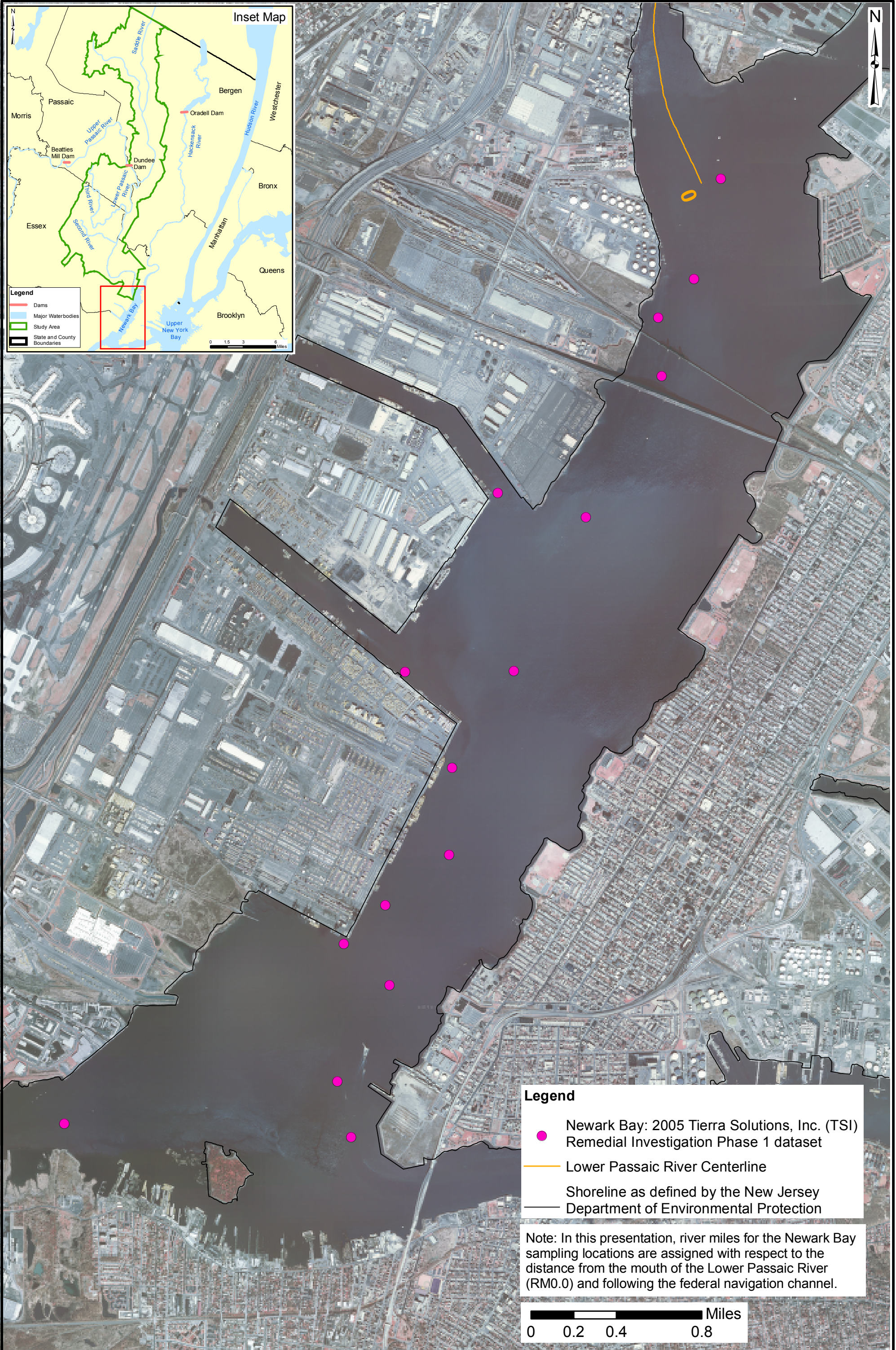
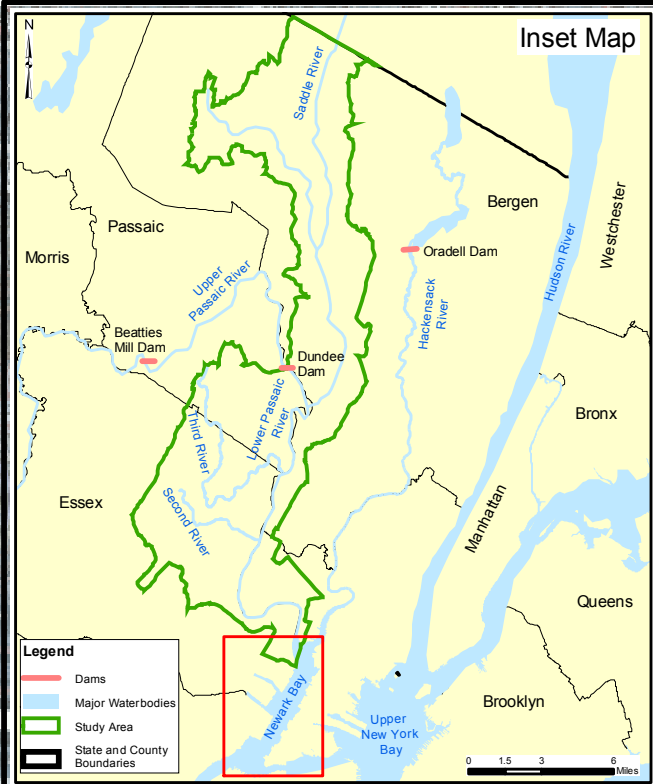
Correlation of PCB Congeners in Dundee Dam,  
Lower Passaic River, and Newark Bay

Lower Passaic River Restoration Project

Figure 5-6

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**Locations of Newark Bay Samples  
Used In the Mass Balance Model**

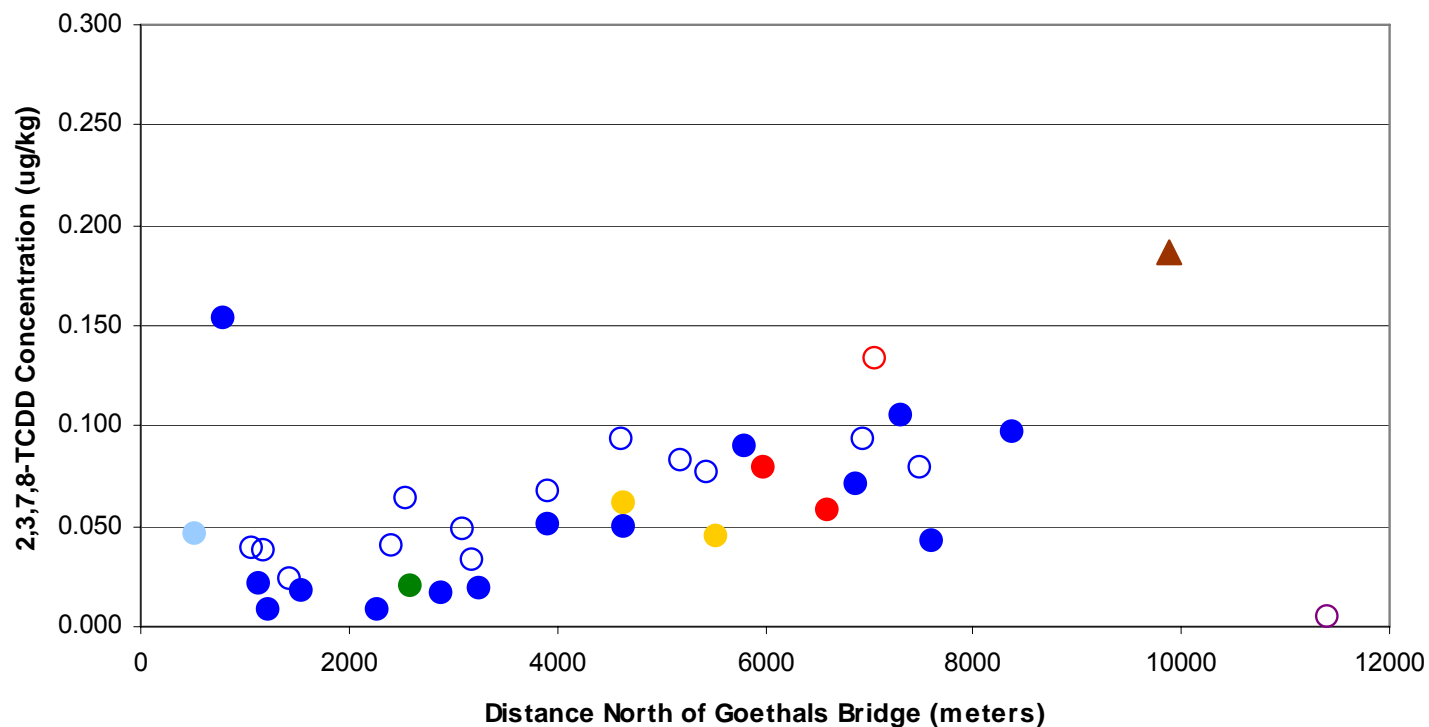
*Lower Passaic River Restoration Project*

Data Source: 2002 Aerial photographs from the New Jersey State data clearing house (<http://njgin.state.nj.us>).

Figure 6-1

September 2008





## Legend

- Newark Bay
- Confluence of unnamed creek with Hackensack River
- Port Newark Channel
- Port Elizabeth Channel
- South Elizabeth Channel
- Arthur Kill
- ▲ Lower Passaic River (2005)

## Symbols Legend

- Coring Locations in Navigation Channels
- Coring Locations outside Navigation Channels

## Notes:

1. 2,3,7,8-TCDD surface concentrations represent the top 6 inches of the core.
2. When duplicate 2,3,7,8-TCDD values are provided by the laboratory, the average concentration is plotted.
3. No nondetected 2,3,7,8-TCDD values were reported for the surface sediment.
4. 2,3,7,8-TCDD concentrations are plotted only for depositional environments, indicated by Beryllium-7 detections more than 0.5 pCi/g in the top inch of the core.
5. Data Source: Malcolm Pirnie, Inc. High Resolution Sediment Core in the Lower Passaic River (RM 1.4). USEPA 2005 Sampling Program.
6. Data Source: Newark Bay Phase 2 RIWP (October 2006). Samples collected in October to December 2005.

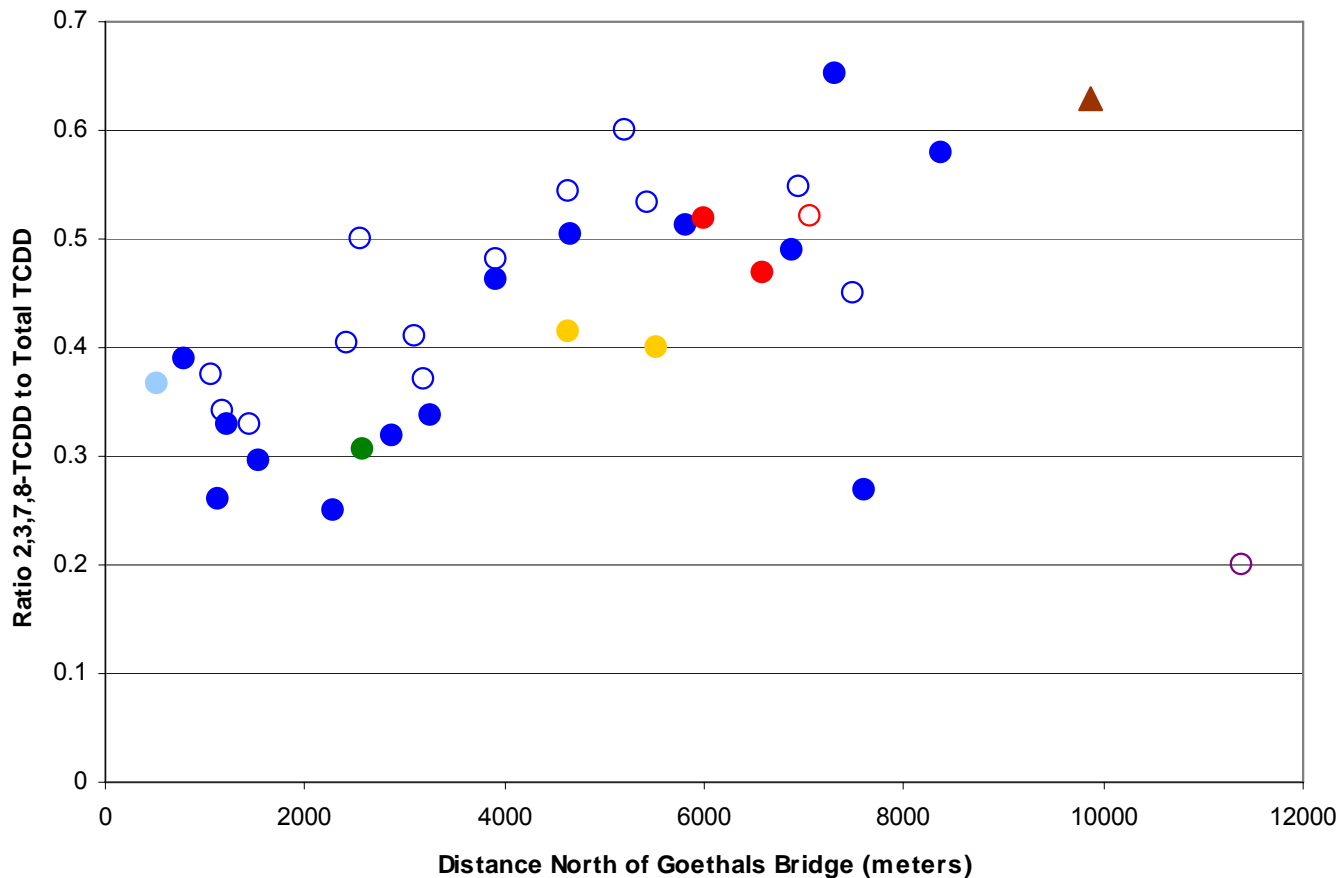


## 2,3,7,8-TCDD Surface Sediment Concentrations in Newark Bay Complex

*Lower Passaic River Restoration Project*

Figure 6-2a

September 2008



### Colors Legend

- Newark Bay
- Confluence of unnamed creek with Hackensack River
- Port Newark Channel
- Port Elizabeth Channel
- South Elizabeth Channel
- Arthur Kill
- ▲ Lower Passaic River (2005)

### Symbols Legend

- Coring Locations in Navigation Channels
- Coring Locations outside Navigation Channels

### Notes:

1. 2,3,7,8-TCDD and Total TCDD surface concentrations represent the top 6 inches of the core.
2. When duplicate 2,3,7,8-TCDD or Total TCDD values are provided by the laboratory, the average ratio is plotted.
3. No nondetected 2,3,7,8-TCDD or Total TCDD values were reported for the surface sediment.
4. Concentration ratios are plotted only for depositional environments, indicated by Beryllium-7 detections more than 0.5 pCi/g in the top inch of the core.
5. Data Source: Malcolm Pirnie, Inc. High Resolution Sediment Core in the Lower Passaic River (RM 1.4). USEPA 2005 Sampling Program.
6. Data Source: Newark Bay Phase 2 RIWP (October 2006). Samples collected in October to December 2005.

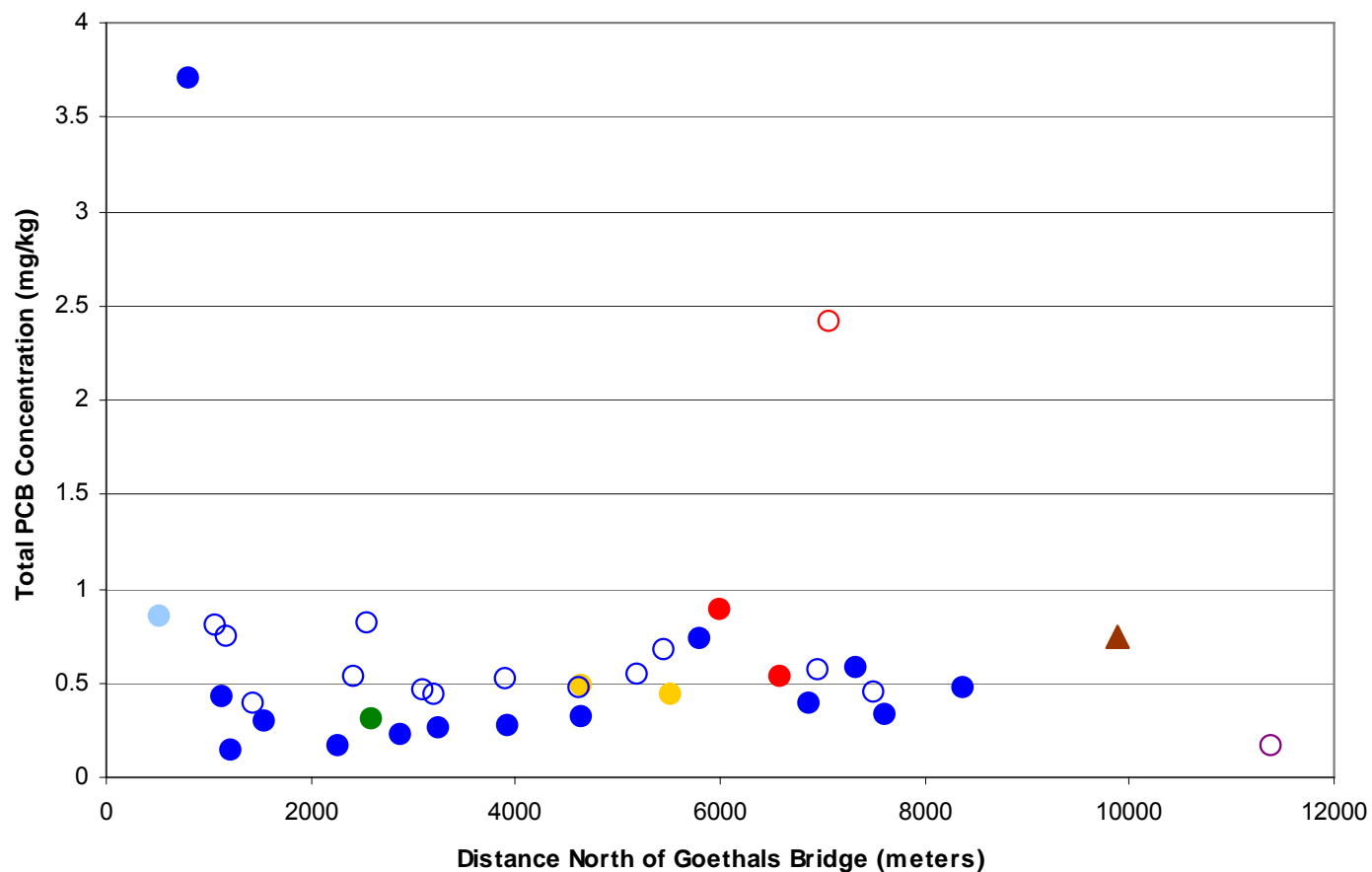


Ratio of 2,3,7,8-TCDD to Total TCDD Surface Sediments Concentrations in Newark Bay Complex

*Lower Passaic River Restoration Project*

Figure 6-2b

September 2008



### Colors Legend

- Newark Bay
- Confluence of unnamed creek with Hackensack River
- Port Newark Channel
- Port Elizabeth Channel
- South Elizabeth Channel
- Arthur Kill
- ▲ Lower Passaic River (2005)

### Symbols Legend

- Coring Locations in Navigation Channels
- Coring Locations outside Navigation Channels

### Notes:

1. Total PCB surface concentrations represent the top 6 inches of the core.
2. Total PCB represents the sum of 209 congeners with nondetected values incorporated into the sum as zero.
3. When duplicate PCB congener values are provided by the laboratory, the average concentration is used in the summation.
4. Total PCB concentrations are plotted only for depositional environments, indicated by Beryllium-7 detections more than 0.5 pCi/g in the top inch of the core.
5. Data Source: Malcolm Pirnie, Inc. High Resolution Sediment Core in the Lower Passaic River (RM 1.4). USEPA 2005 Sampling Program.
6. Data Source: Newark Bay Phase 2 RIWP (October 2006). Samples collected in October to December 2005.



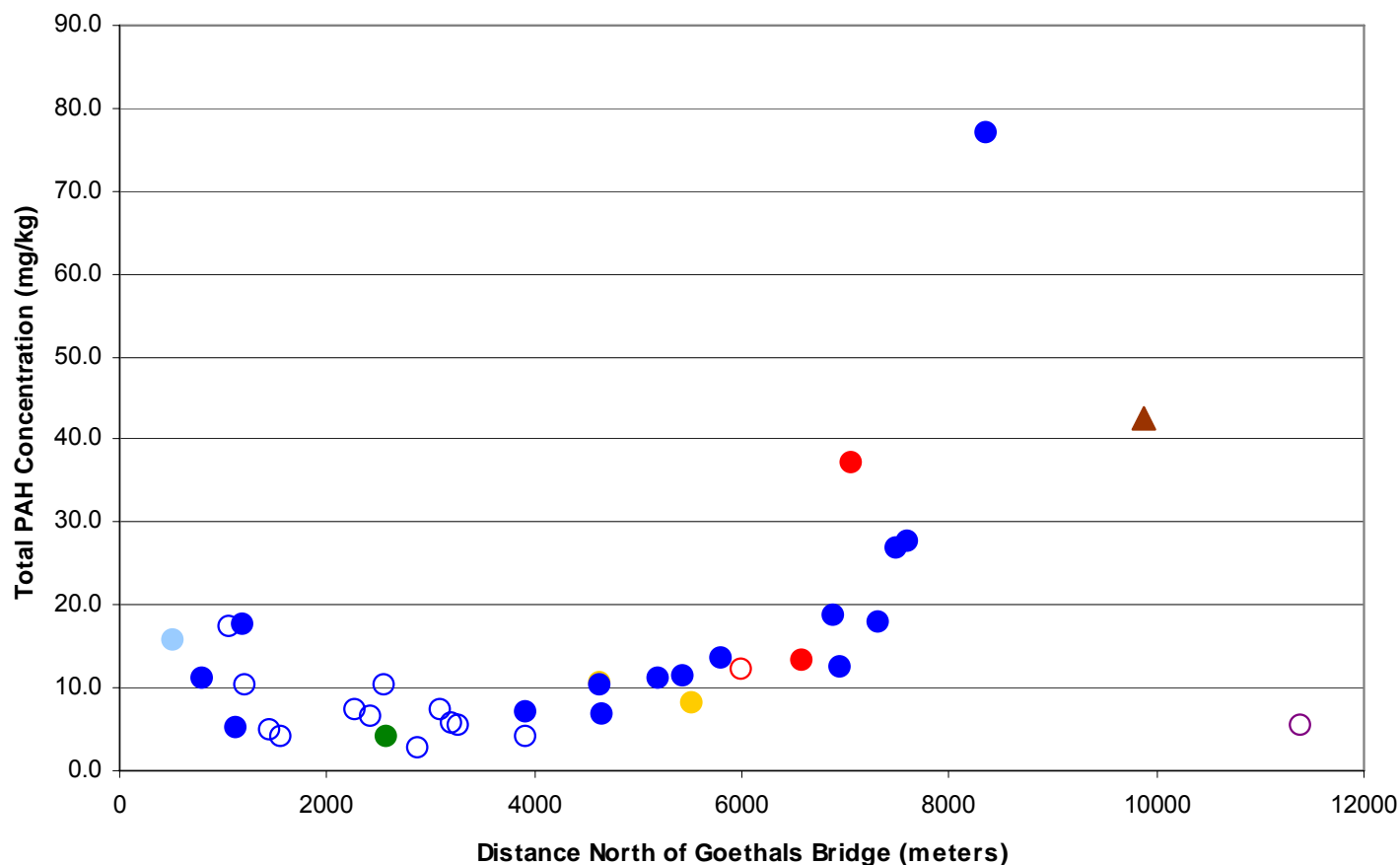
## Total PCB Surface Sediments Concentrations in Newark Bay Complex

*Lower Passaic River Restoration Project*

Figure 6-2c

September 2008





### Colors Legend

- Newark Bay
- Confluence of unnamed creek with Hackensack River
- Port Newark Channel
- Port Elizabeth Channel
- South Elizabeth Channel
- Arthur Kill
- ▲ Lower Passaic River (2005)

### Symbols Legend

- Coring Locations in Navigation Channels
- Coring Locations outside Navigation Channels

### Notes:

1. Total PAH surface concentrations represent the top 6 inches of the core.
2. The Total PAH value is the sum of the 16 PAHs listed in the USEPA Priority List with nondetected values incorporated into the sum as zero.
3. When duplicate PAH values are provided by the laboratory, the average concentration is used in the summation.
4. Total PAH concentrations are plotted only for depositional environments, indicated by Beryllium-7 detections more than 0.5 pCi/g in the top inch of the core.
5. Data Source: Malcolm Pirnie, Inc. High Resolution Sediment Core in the Lower Passaic River (RM 1.4). USEPA 2005 Sampling Program.
6. Data Source: Newark Bay Phase 2 RIWP (October 2006). Samples collected in October to December 2005.

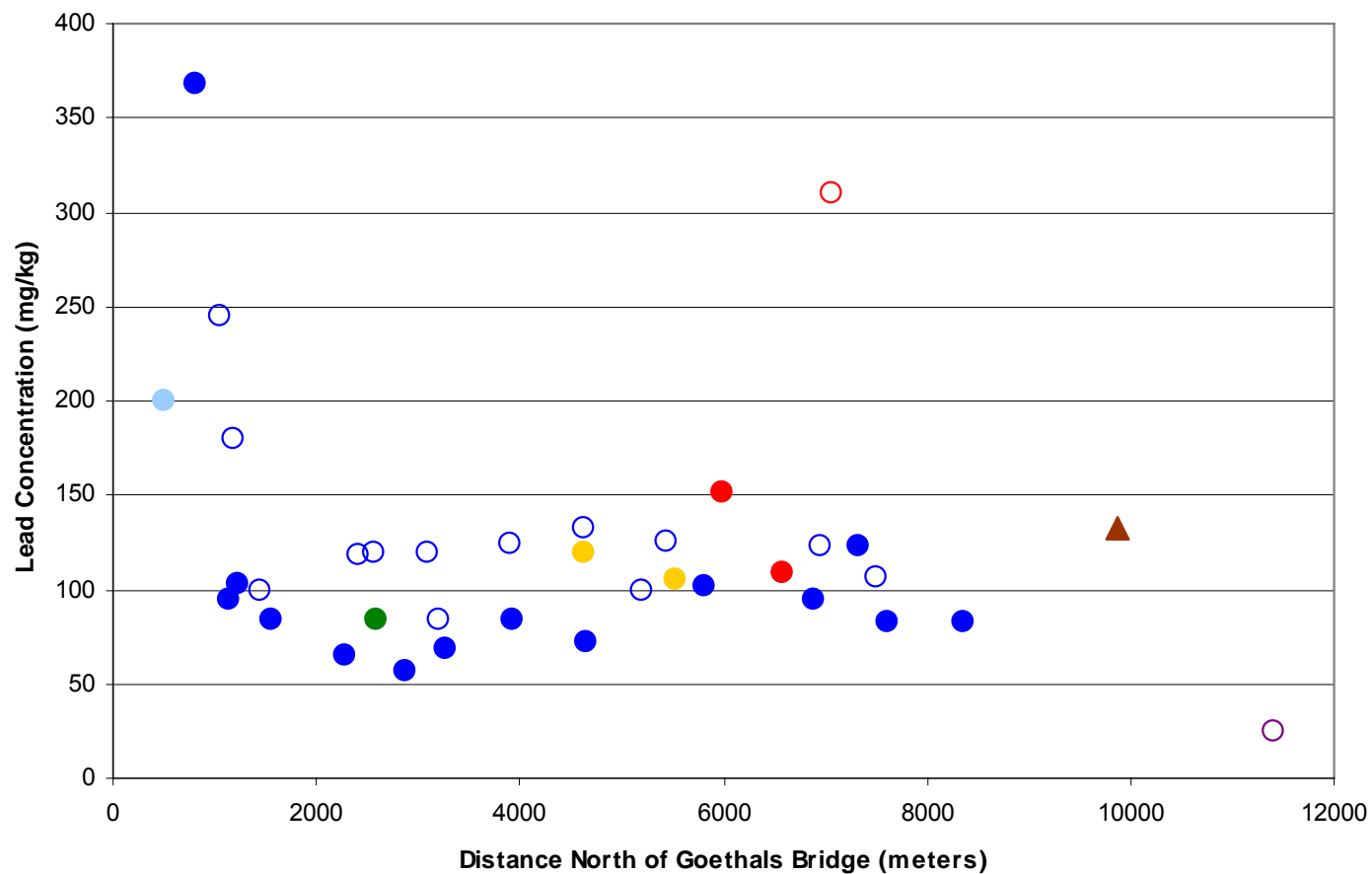


## Total PAH Surface Sediments Concentrations in Newark Bay Complex

*Lower Passaic River Restoration Project*

Figure 6-2d

September 2008



### Colors Legend

- Newark Bay
- Confluence of unnamed creek with Hackensack River
- Port Newark Channel
- Port Elizabeth Channel
- South Elizabeth Channel
- Arthur Kill
- Lower Passaic River (2005)

## Symbols Legend

- Coring Locations in Navigation Channels
- Coring Locations outside Navigation Channels

**Notes:**

1. Lead surface concentrations represent the top 6 inches of the core.
2. When duplicate lead values are provided by the laboratory, the average lead concentration is plotted.
3. No nondetected lead values were reported for the surface sediment.
4. Lead concentrations are plotted only for depositional environments, indicated by Beryllium-7 detections more than 0.5 pCi/g in the top inch of the core.
5. Data Source: Malcolm Pirnie, Inc. High Resolution Sediment Core in the Lower Passaic River (RM 1.4). USEPA 2005 Sampling Program.
6. Data Source: Newark Bay Phase 2 RIWP (October 2006). Samples collected in October to December 2005.

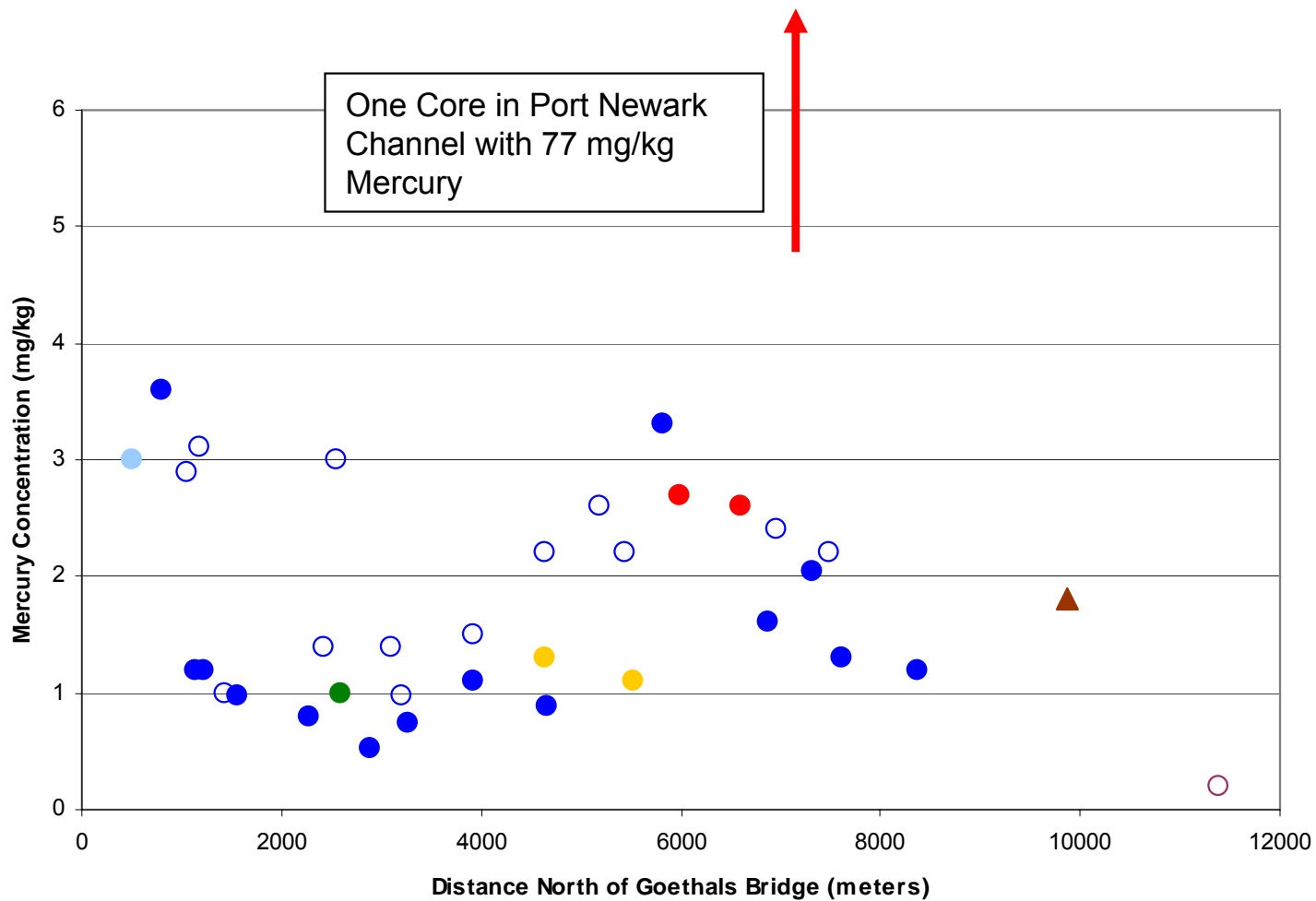


## Lead Surface Sediment Concentrations in Newark Bay Complex

*Lower Passaic River Restoration Project*

Figure 6-2e

September 2008



### Colors Legend

- Newark Bay
- Confluence of unnamed creek with Hackensack River
- Port Newark Channel
- Port Elizabeth Channel
- South Elizabeth Channel
- Arthur Kill
- ▲ Lower Passaic River (2005)

### Symbols Legend

- Coring Locations in Navigation Channels
- Coring Locations outside Navigation Channels

### Notes:

1. Mercury surface concentrations represent the top 6 inches of the core.
2. When duplicate mercury values are provided by the laboratory, the average mercury concentration is plotted.
3. No nondetected mercury values were reported for the surface sediment.
4. Mercury concentrations are plotted only for depositional environments, indicated by Beryllium-7 detections more than 0.5 pCi/g in the top inch of the core.
5. Data Source: Malcolm Pirnie, Inc. High Resolution Sediment Core in the Lower Passaic River (RM 1.4). USEPA 2005 Sampling Program.
6. Data Source: Newark Bay Phase 2 RIWP (October 2006). Samples collected in October to December 2005.



## Mercury Surface Sediment Concentrations in Newark Bay Complex

*Lower Passaic River Restoration Project*

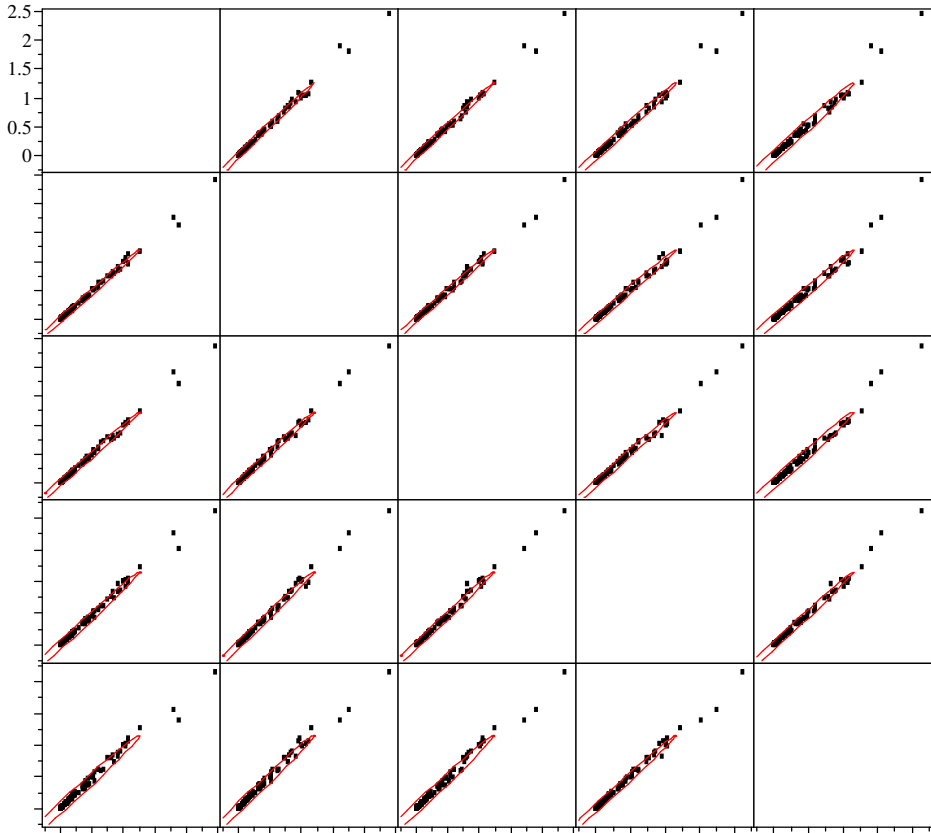
Figure 6-2f

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Multivariate Correlations

	NB01SED017 RM(-4.6)	NB01SED021 RM(-4.1)	NB01SED024 RM(-4.0)	NB01SED030 RM(-3.4)	NB01SED031 RM(-3.0)
NB01SED017 RM(-4.6)	1.0000	0.9978	0.9976	0.9961	0.9931
NB01SED021 RM(-4.1)	0.9978	1.0000	0.9976	0.9962	0.9941
NB01SED024 RM(-4.0)	0.9976	0.9976	1.0000	0.9969	0.9934
NB01SED030 RM(-3.4)	0.9961	0.9962	0.9969	1.0000	0.9964
NB01SED031 (-3.0)	0.9931	0.9941	0.9934	0.9964	1.0000

Scatterplot Matrix



Legend

- PCB Congeners Concentration Normalized to Congener 52

Notes

In this presentation, river miles for the Newark Bay sampling locations are assigned with respect to the distance from the mouth of the Lower Passaic River (RM0.0) and following the federal navigation channel.

Data Source: 2005 Tierra Solutions, Inc. (TSI) Remedial Investigation Phase 1 dataset

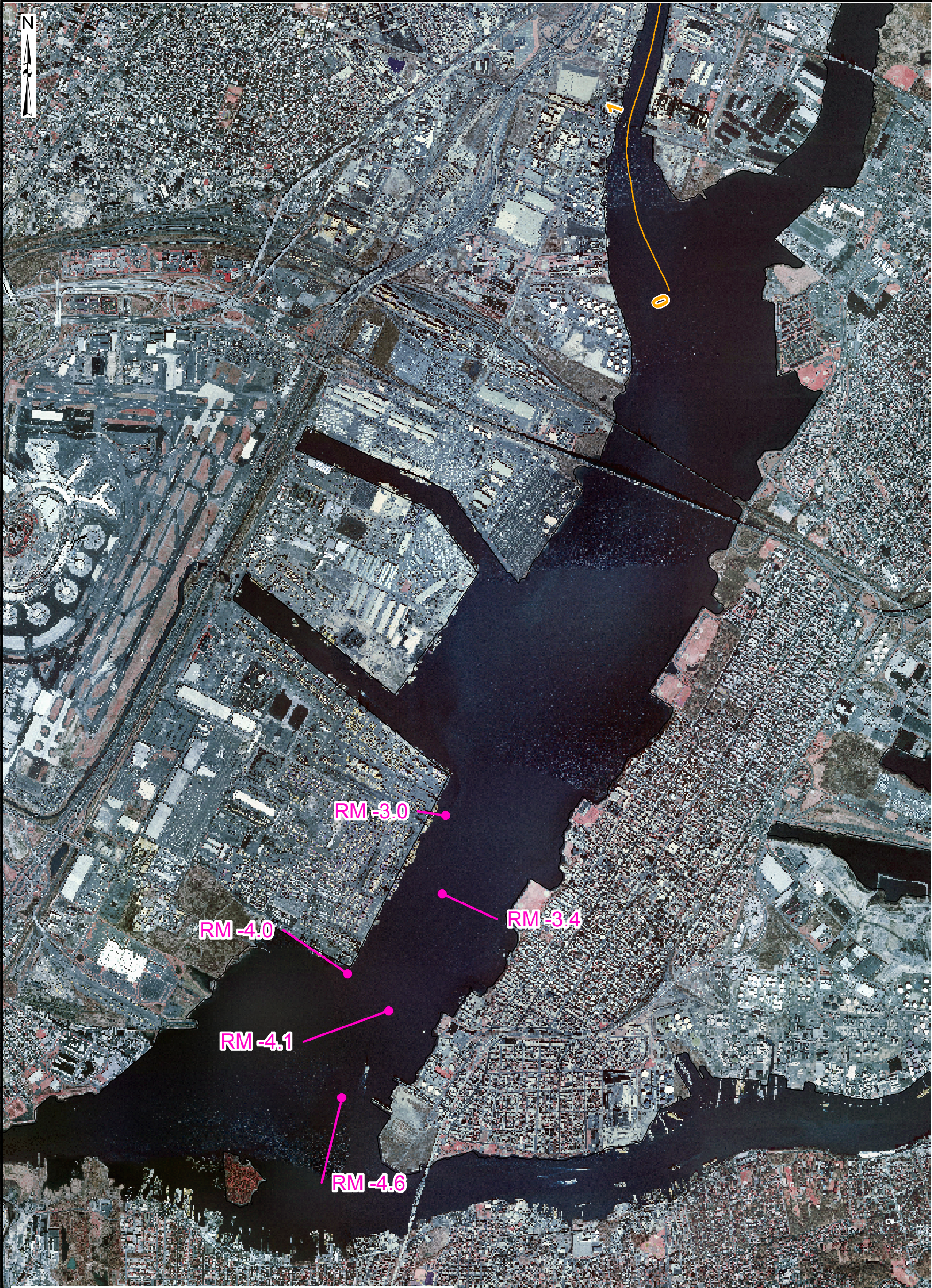


PCB Multivariate Analysis  
*Lower Passaic River Restoration Project*

Figure 6-3

September 2008





**Legend**

Newark Bay:2005 Tierra Solutions, Inc. (TSI)

Lower Passaic River Centerline (1/10-Mile River Segments)

Shoreline as defined by the New Jersey Department of Environmental Protection



Note: In this presentation, river miles for the Newark Bay sampling locations are assigned with respect to the distance from the mouth of the Lower Passaic River (RM0.0) and following the federal navigation channel.



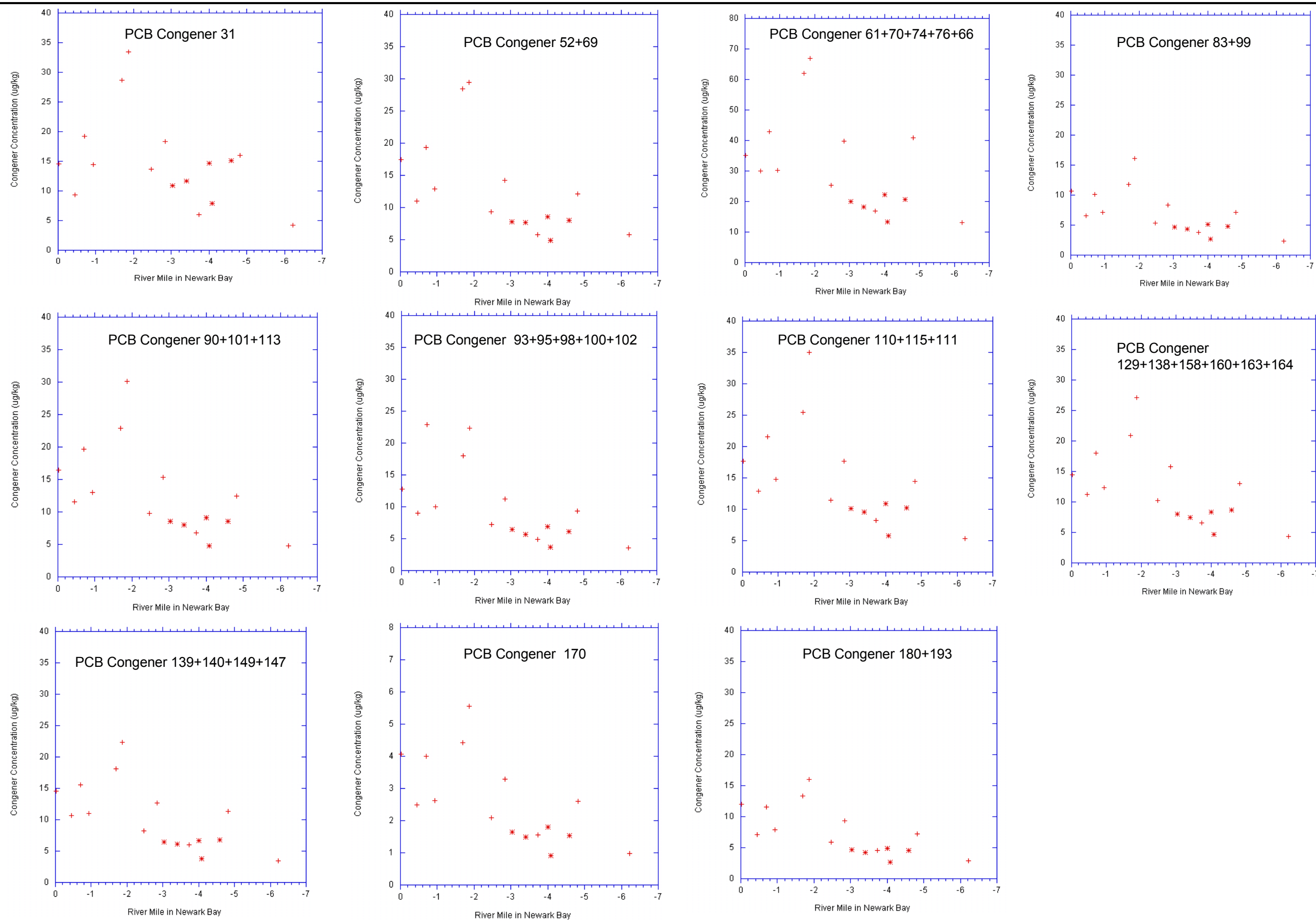
**Site Location Map of Selected Southern Locations in Newark Bay**

*Lower Passaic River Restoration Project*

Data Source: 2002 Aerial photographs from the New Jersey State data clearing house (<http://njgin.state.nj.us>).

Figure 6-4

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Legend

PCB Congener Concentration at Newark Bay Sampling Location

Highlighted Southern Sampling Locations

Notes



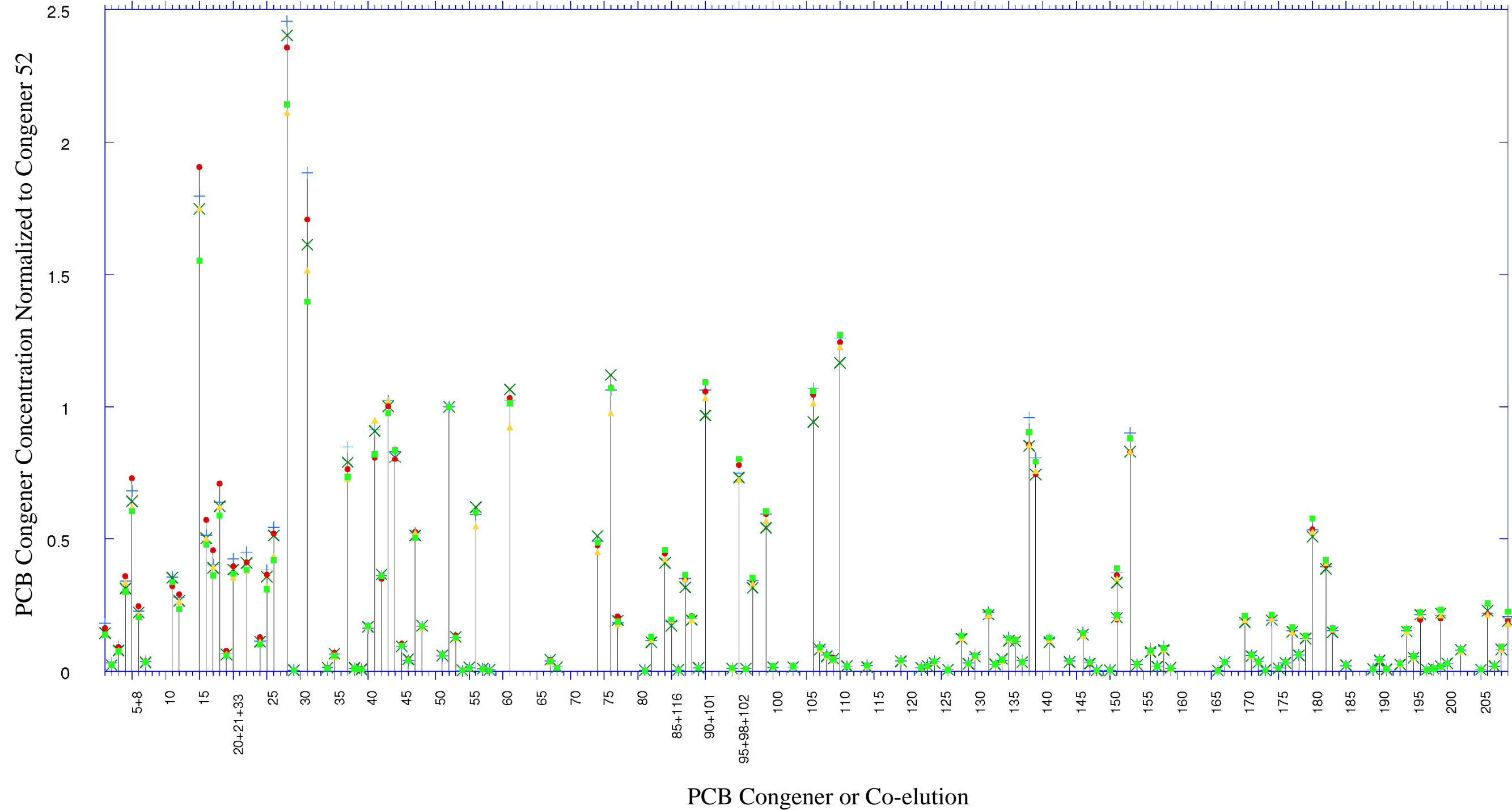
PCB Congener Surface Sediment Concentrations in Newark Bay

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Figure 6-5

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PCB Congener Concentration Normalized to Congener 52 Pattern for Southern Locations in Newark Bay

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Figure 6-6

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Multivariate Correlations

	NB01SED061 (RM-0.45)	NB01SED052 (RM-0.71)	NB01SED055 (RM-0.94)	NB01SED046 (RM-1.7)	NB01SED047 (RM-1.9)
NB01SED061 (RM-0.45)	1.0000	0.9906	0.9830	0.9704	0.9778
NB01SED052 (RM-0.71)	0.9906	1.0000	0.9882	0.9796	0.9831
NB01SED055 (RM-0.94)	0.9830	0.9882	1.0000	0.9852	0.9967
NB01SED046 (RM-1.7)	0.9704	0.9796	0.9852	1.0000	0.9880
NB01SED047 (RM-1.9)	0.9778	0.9831	0.9967	0.9880	1.0000

Legend

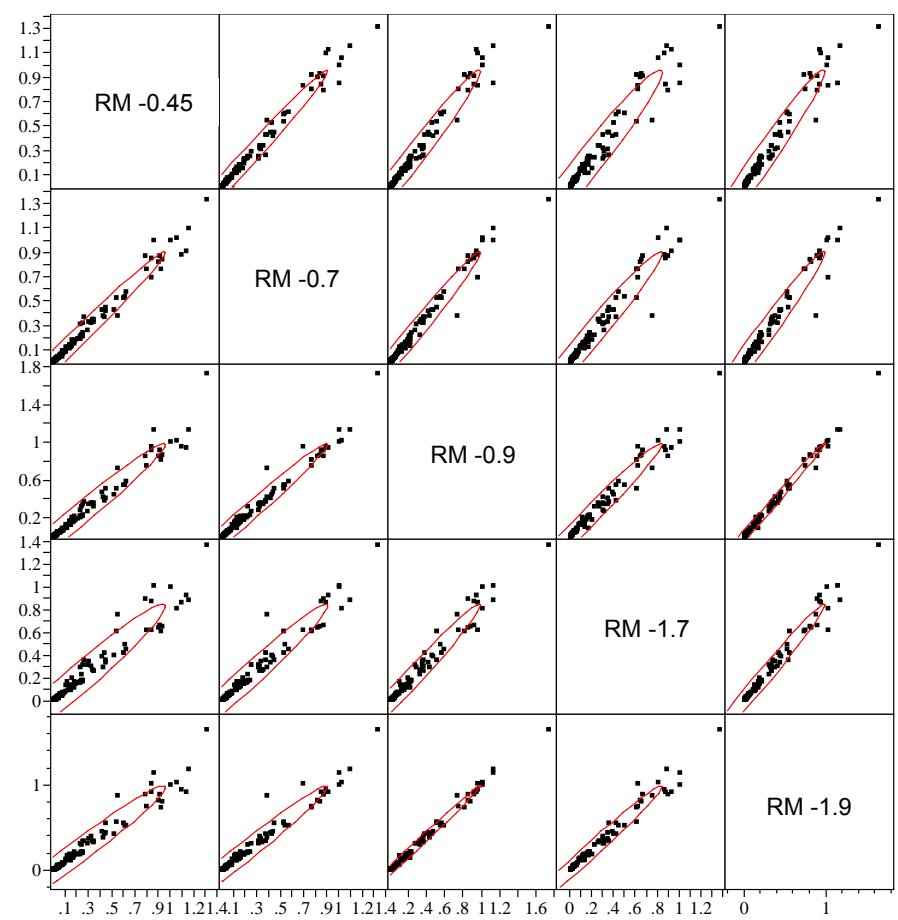
- PCB Congeners  
Concentration Normalized  
to Congener 52

Notes

In this presentation, river miles for the Newark Bay sampling locations are assigned with respect to the distance from the mouth of the Lower Passaic River (RM0.0) and following the federal navigation channel.

Data Source: 2005 Tierra Solutions, Inc. (TSI) Remedial Investigation Phase 1 dataset.

Scatterplot Matrix



Correlation Among Sampling Locations of PCB Congeners Concentration Normalized to Congener 52 in Northern Newark Bay Samples

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Figure 6-7

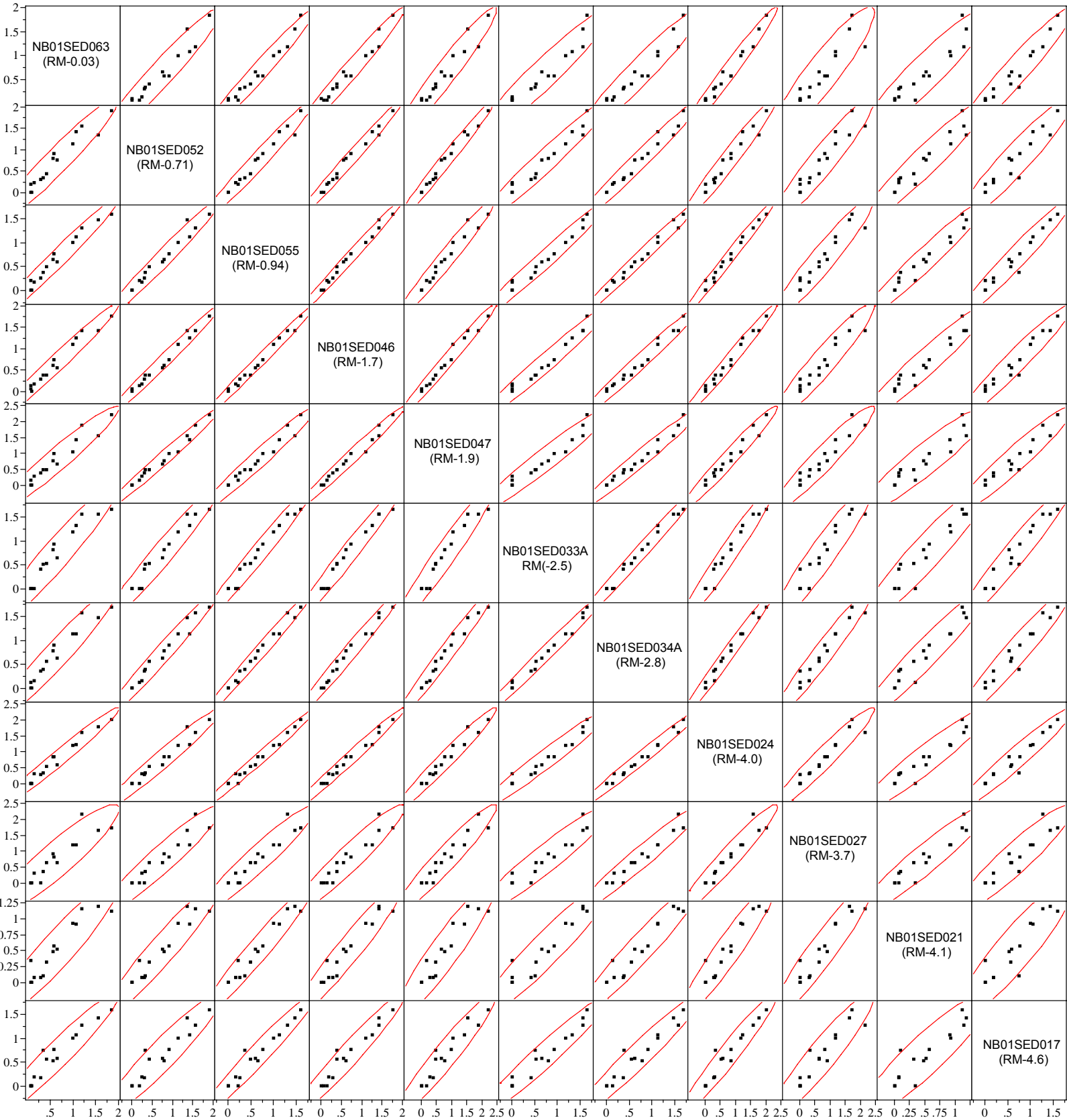
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Multivariate Correlations

	NB01SED06 3 (RM-0.03)	NB01SED05 2 (RM-0.71)	NB01SED05 5 (RM-0.94)	NB01SED04 6 (RM-1.7)	NB01SED04 7 (RM-1.9)	NB01SED03 3A RM(-2.5)	NB01SED03 4A (RM-2.8)	NB01SED02 4 (RM-4.0)	NB01SED02 7 (RM-3.7)	NB01SED02 1 (RM-4.1)	NB01SED01 7 (RM-4.6)
NB01SED063 (RM-0.03)	1.0000	0.9625	0.9811	0.9820	0.9627	0.9565	0.9634	0.9823	0.9171	0.9360	0.9594
NB01SED052 (RM-0.71)	0.9625	1.0000	0.9823	0.9899	0.9877	0.9740	0.9831	0.9752	0.9485	0.9570	0.9474
NB01SED055 (RM-0.94)	0.9811	0.9823	1.0000	0.9923	0.9780	0.9831	0.9904	0.9903	0.9536	0.9716	0.9725
NB01SED046 (RM-1.7)	0.9820	0.9899	0.9923	1.0000	0.9875	0.9812	0.9866	0.9872	0.9508	0.9615	0.9678
NB01SED047 (RM-1.9)	0.9627	0.9877	0.9780	0.9875	1.0000	0.9673	0.9821	0.9771	0.9534	0.9349	0.9562
NB01SED033 A RM(-2.5)	0.9565	0.9740	0.9831	0.9812	0.9673	1.0000	0.9904	0.9747	0.9505	0.9479	0.9685
NB01SED034 A (RM-2.8)	0.9634	0.9831	0.9904	0.9866	0.9821	0.9904	1.0000	0.9880	0.9708	0.9612	0.9651
NB01SED024 (RM-4.0)	0.9823	0.9752	0.9903	0.9872	0.9771	0.9747	0.9880	1.0000	0.9625	0.9490	0.9663
NB01SED027 (RM-3.7)	0.9171	0.9485	0.9536	0.9508	0.9534	0.9505	0.9708	0.9625	1.0000	0.9450	0.9345
NB01SED021 (RM-4.1)	0.9360	0.9570	0.9716	0.9615	0.9349	0.9479	0.9612	0.9490	0.9450	1.0000	0.9128
NB01SED01 7 (RM-4.6)	0.9594	0.9474	0.9725	0.9678	0.9562	0.9685	0.9651	0.9663	0.9345	0.9128	1.0000

Scatterplot Matrix



Legend

● PAH Compounds  
Normalized to  
Dieldrin

Notes

PAH Compounds  
normalized to dieldrin.

In this presentation,  
river miles for the  
Newark Bay sampling  
locations are assigned  
with respect to the  
distance from the  
mouth of the Lower  
Passaic River (RM0.0)  
and following the  
federal navigation  
channel.

Data Source:2005  
Tierra Solutions, Inc.  
(TSI) Remedial  
Investigation Phase 1  
dataset.

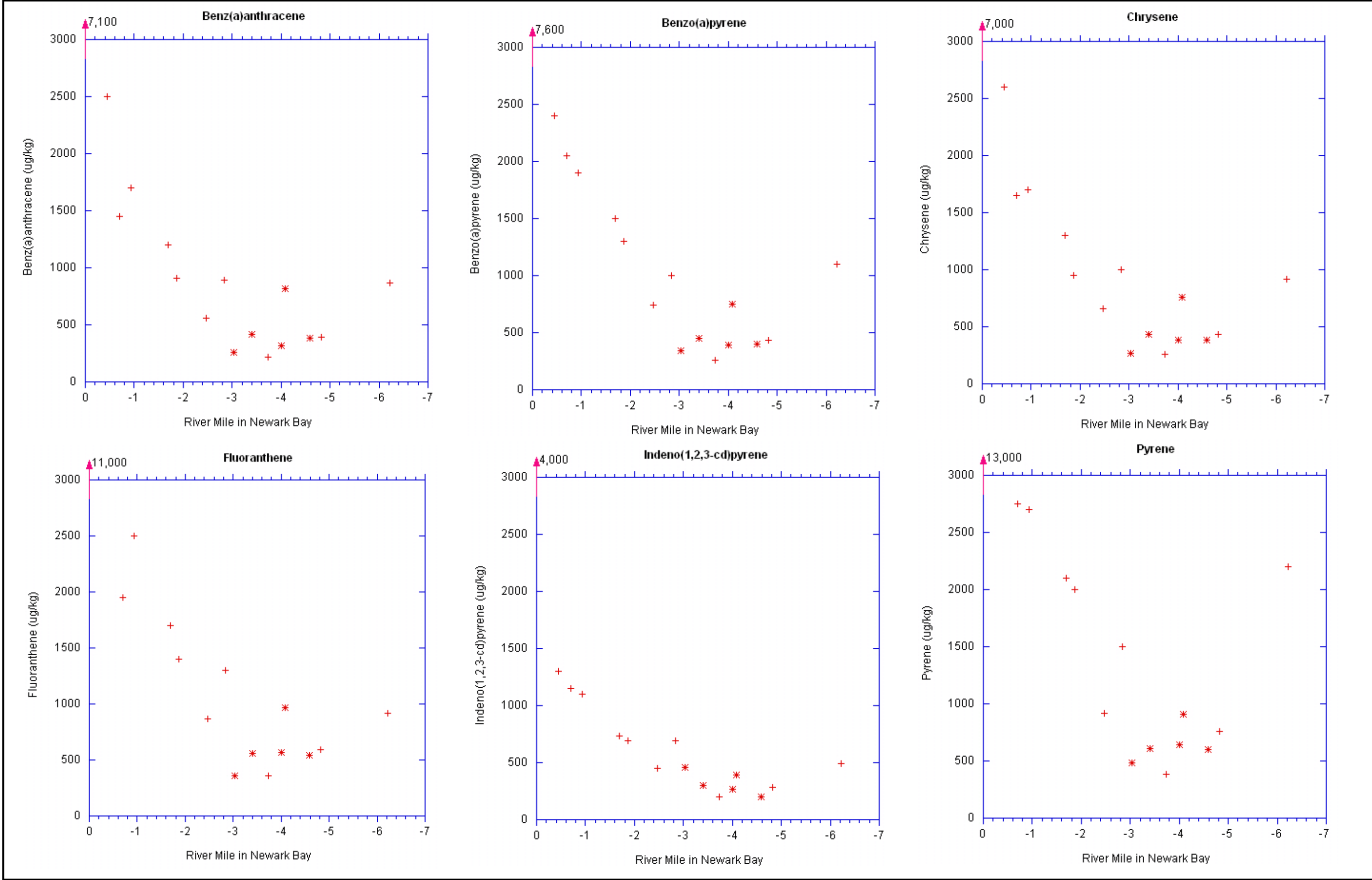


Correlation Among Sampling Locations of PAH  
Compounds in Newark Bay Samples

Lower Passaic River Restoration Project

Figure 6-8

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### Legend

+ PAH Compounds Concentration at Newark Bay Sampling Location

X Highlighted Southern Sampling Locations

### Notes

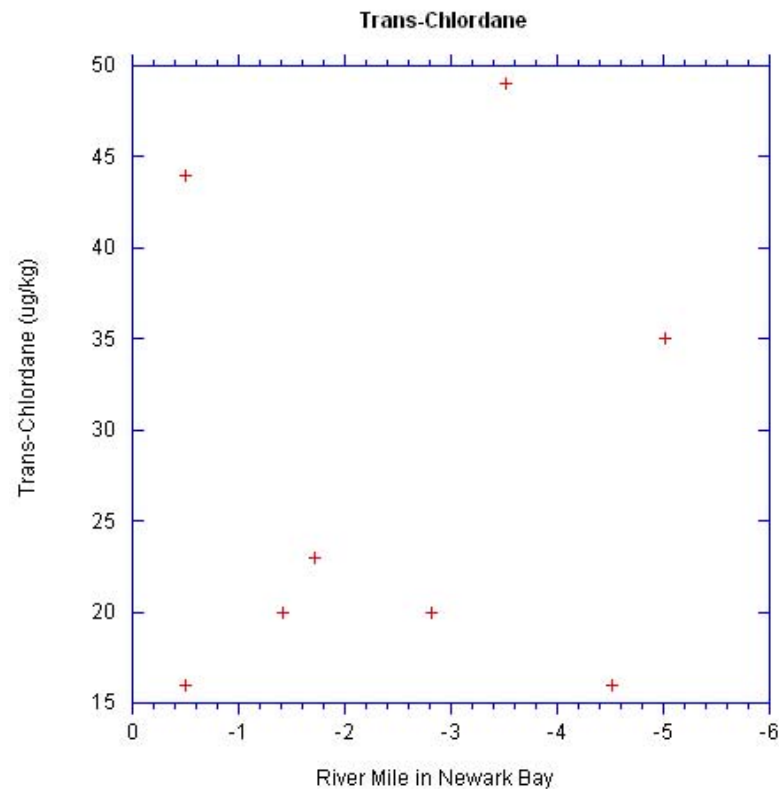
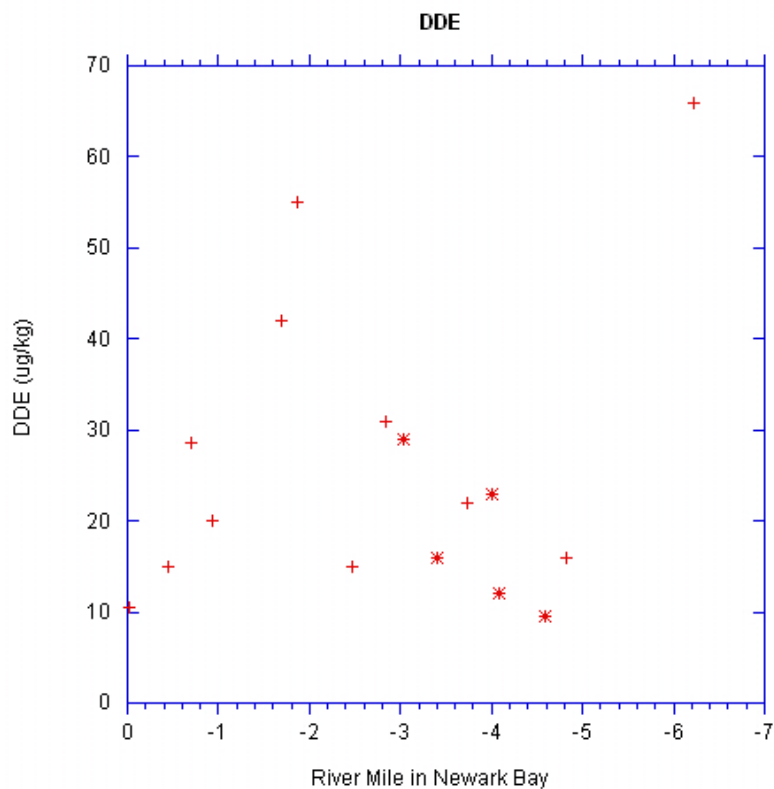


PAH Compounds Surface Sediment Concentrations in Newark Bay

*Lower Passaic River Restoration Project*

Figure 6-9

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## Legend

Pesticides  
+ Concentration at Newark Bay Sampling Location

X Highlighted Southern Sampling Locations

## Notes

Negative River Mile represents the distance from the mouth of the Lower Passaic River into Newark Bay following the federal navigation channel.

DDE represents only 4,4'-isomer.

Plot only shows the selected 16 depositional locations that are located in the federal navigation channel.

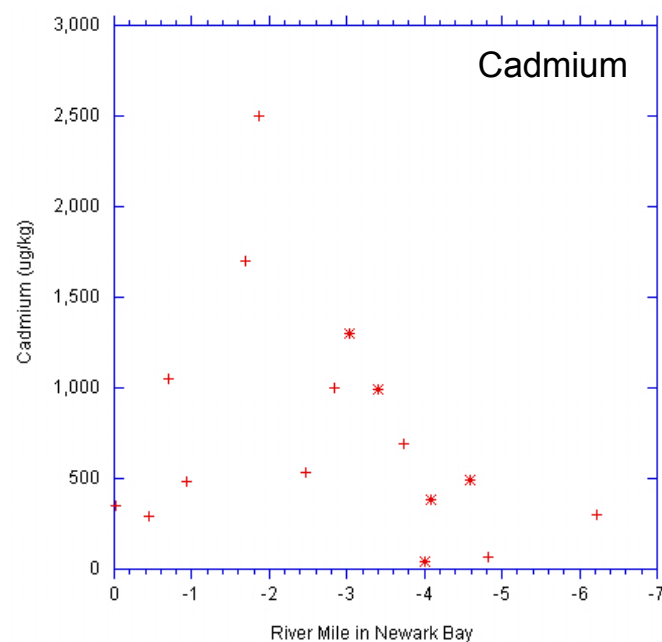
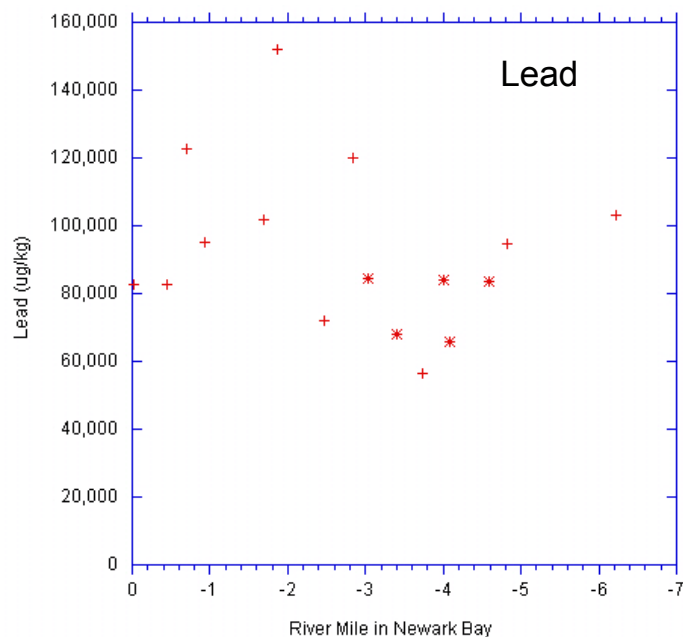
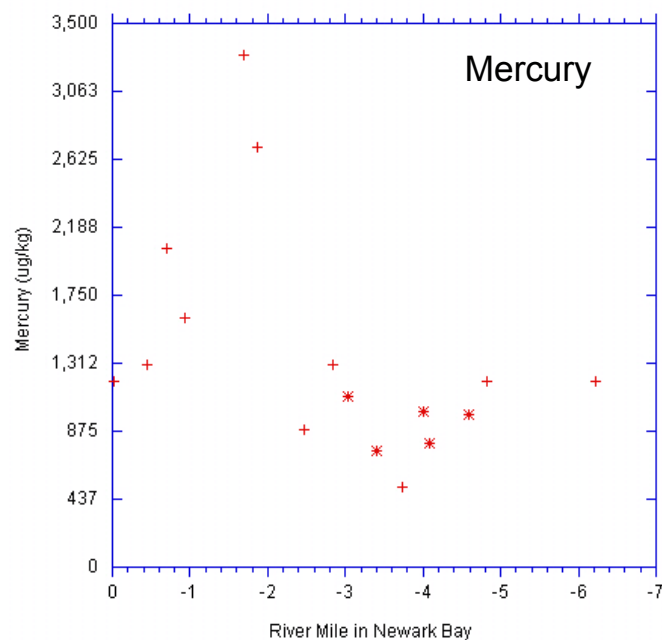


Pesticides Surface Sediment Concentrations in Newark Bay

*Lower Passaic River Restoration Project*

Figure 6-10

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## Legend

- + Metal Concentration at Newark Bay Sampling Location
- x Highlighted Southern Sampling Locations

## Notes

Negative River Mile represents the distance from the mouth of the Lower Passaic River into Newark Bay following the federal navigation channel.

Plot only shows the selected 16 depositional locations that are located in the federal navigation channel.



## Metal Surface Sediment Concentrations in Newark Bay

*Lower Passaic River Restoration Project*

Figure 6-11

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